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RESEARCH MEMORANDUM

EFFECTS OF LEADING-EDGE CHORD EXTENSIONS AND AN ALL-MOVABLE HORIZONTAL TAIL ON THE AERODYNAMIC CHARACTERISTICS OF A WING-BODY COMBINATION EMPLOYING A TRIANGULAR WING OF ASPECT RATIO 3 MOUNTED IN A HIGH POSITION AT SUBSONIC AND SUPERSONIC SPEEDS

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NATIONAL ADVISORY COMMITTEE FOR AERONAUTICS

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RESEARCH MEMORANDUM

EFFECTS OF LEADING-EDGE CHORD EXTENSIONS AND AN ALL-MOVABLE HORIZONTAL TAIL ON THE AERODYNAMIC CHARACTERISTICS OF A WING-BODY COMBINATION EMPLOYING A TRIANGULAR WING OF ASPECT RATIO 3 MOUNTED IN A HIGH POSITION AT SUBSONIC AND SUPERSONIC SPEEDS

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SUMMARY

The results of an experimental investigation of the effect of leading-edge chord extensions on the aerodynamic characteristics of a wing-body-tail combination employing a 3-percent-thick triangular wing of aspect ratio 3 in conjunction with an unswept, all-movable, horizontal tail located below the wing-chord plane are presented. Lift, drag, pitching moment, and hinge moment were measured at Mach numbers varying from 0.6 to 0.9 and from 1.2 to 1.9, at a Reynolds number of 3.8 million. The angle of attack was varied from -4° to $+17^{\circ}$ at constant horizontal-tail deflections varying from $+4^{\circ}$ to -24°. Data are also presented for the model without the horizontal tail.

The wing-body-tail combination was tested with 13.35-percent-chord, leading-edge chord extensions on the outer 50 percent of the wing semispan in an effort to improve the undesirable static longitudinal stability characteristics of the triangular wing at moderate-to-high lift coefficients at subsonic speeds. To improve, also, the subsonic lift and drag characteristics, the chord extensions were drooped 3°.

Comparisons of the results obtained for the wing-body-tail combination having chord extensions with those for the combination without chord extensions showed that the extensions improved the lift, drag, and pitching-moment characteristics at moderate-to-high lift coefficients at subsonic speeds and had small effect on those characteristics at supersonic speeds. Static longitudinal instability, which occurred in a range of moderate lift coefficients at Mach numbers of 0.6 and 0.8 for the model without chord extensions, was either eliminated ($M = 0.8$) or delayed to higher lift coefficients ($M = 0.6$). Improved variations of lift with angle of attack at the aforementioned Mach numbers and

[redacted]

increased maximum lift-drag ratios at Mach numbers from 0.6 to 1.3 were realized from the addition of chord extensions. Essentially no changes in the hinge-moment characteristics were brought about at either subsonic or supersonic speeds by the addition of chord extensions.

INTRODUCTION

As part of a program devoted to the investigation of components of interceptor-type supersonic aircraft, a wing-body-tail combination employing a 3-percent-thick triangular wing of aspect ratio 3 and an all-movable horizontal tail was tested in the Ames 6- by 6-foot supersonic wind tunnel. The wing was mounted high on the body, and the tail was below the wing-chord plane. Previous tests of the wing-body combination (ref. 1) showed losses in stability at moderate-to-high lift coefficients at subsonic speeds. Tests of models similar to the present one (ref. 2) have indicated that such variations in stability might be avoided or minimized by locating the horizontal tail in certain positions below the extended chord plane of the wing; however, when the tail was added to the present model, the instability still persisted, and the presence of the tail had little influence upon stability variations. Therefore, the possibility of improving the stability by modifying the wing so as to reduce the center-of-pressure movement was investigated.

This center-of-pressure movement has been shown by previous tests of thin triangular wings to result from flow separation at the wing tips. This flow separation is believed to be accompanied by separation vortices (ref. 3) generated on the upper surface of the wing, which could have an adverse effect on the stability. Research on sweptback wings (e.g., ref. 4) has shown that improvement of the characteristics of such wings can be obtained through the use of leading-edge chord extensions, which serve either to eliminate or to reduce separation or vortex-type flow over the tip sections. An effort was made to improve the longitudinal stability characteristics of the present model through the addition of such devices. The chord extensions were drooped a small amount in order to obtain improved subsonic drag characteristics, such as were reported in reference 4.

The present paper is devoted primarily to the comparison of the lift, drag, and pitching-moment characteristics of the wing-body-tail combination with and without the leading-edge chord extensions and to the presentation of the control-surface characteristics of the combination with chord extensions.

SYMBOLS

b wing span, in.

C_D drag coefficient, $\frac{\text{drag}}{qS}$

C_h hinge-moment coefficient, $\frac{\text{hinge moment}}{qS_t\bar{c}_t}$, measured about an axis at 30 percent of the chord of the horizontal tail

C_L lift coefficient, $\frac{\text{lift}}{qS}$

C_m pitching-moment coefficient, $\frac{\text{pitching moment}}{qS\bar{c}}$, referred to a horizontal axis through the point on the body axis corresponding to 35-percent mean aerodynamic chord of the wing

c local wing chord of the wing without chord extensions, in.

c_t local chord of the horizontal tail, in.

$\bar{c}$ mean aerodynamic chord of the wing, $\frac{\int_0^{b/2} c^2 dy}{\int_0^{b/2} c\, dy}$, in.

$\bar{c}_t$ mean aerodynamic chord of horizontal tail, in.

$\left(\frac{L}{D}\right)_{max}$ maximum lift-drag ratio

M free-stream Mach number

q free-stream dynamic pressure, lb/sq in.

R Reynolds number based on the mean aerodynamic chord of the wing

S wing area, formed by extending the leading and trailing edges to the plane of symmetry, sq in. (The additional area provided by the leading-edge chord extensions has not been included.)

S_t area of horizontal tail, formed by extending the leading and trailing edges to the plane of symmetry, sq in.

y spanwise distance from plane of symmetry, in.

α angle of attack of body axis, deg

δ angle of horizontal-tail deflection, positive for trailing edge down, deg

δ_n nominal (no load) horizontal-tail deflection, deg

APPARATUS AND MODEL

The experimental investigation was conducted in the Ames 6- by 6-foot supersonic wind tunnel, which is a closed-section, variable-pressure-type tunnel with a Mach number range from 0.6 to 0.9 and from 1.2 to 1.9. A complete description of this facility has been published in reference 5. In this wind tunnel, models are sting-mounted, and over-all forces are measured with an internal electrical strain-gage balance. The model was also equipped with an electrical strain gage which measured the hinge moments on the horizontal tail.

The model consisted of a triangular wing, an all-movable horizontal tail, two vertical fins, and a body. The wing was mounted in a high position on the body, had an aspect ratio of 3, and was composed of NACA 0003-63 airfoil sections in streamwise planes. During a portion of the investigation, the wing was equipped with 13.35-percent-chord, leading-edge chord extensions over the outer 50-percent semispan of the wing, as shown in figure 1. The extensions had the same ordinates as the corresponding wing airfoil sections, with smooth fairings providing the transitions between the extensions and the wing. The chord extensions were drooped 3° with respect to the chord line.

The horizontal tail, which was mounted in a midposition on the body, was pivoted at the 30-percent-chord point and had a taper ratio of 0.4 and an aspect ratio of 5. The airfoil section in a streamwise plane was biconvex, with a maximum thickness-chord ratio of 3 percent at 30-percent chord. The tail was supported at the tips by the two vertical fins rigidly attached to the wing at the 50-percent-semispan station. These fins were of aspect ratio 2.08 and had a 3-percent-thick biconvex section in a streamwise plane. The wing and tail surfaces were of solid steel construction.

The body was the same as that described in reference 1 for use in conjunction with the wings positioned off the body axis. It had a fineness ratio of 9.86. A photograph of the complete model is shown in figure 2.

TEST AND PROCEDURE

Range of Test Variables

Lift, drag, pitching-moment, and hinge-moment characteristics of the model were investigated for a range of Mach numbers varying from 0.6 to 0.9 and from 1.2 to 1.9 at nominal angles of attack varying from -4° to a maximum of $+17^\circ$. The model with horizontal tail installed was tested at horizontal-tail deflections varying from $+4^\circ$ to -24°, generally in 4° increments. The data were obtained at a Reynolds number of 3.8 million, based on the wing mean aerodynamic chord.

Reduction of Data

The test data have been reduced to standard NACA coefficient form. The pitching moments were calculated about a horizontal axis through the point on the body axis corresponding to 35 percent of the mean aerodynamic chord. Factors which affect the accuracy of these data are discussed in the following paragraphs.

Tunnel-wall interference.- Corrections to the subsonic results for the induced effects of the wind-tunnel walls resulting from lift on the model were made according to the methods of reference 6. The numerical values of these corrections, which were added to the uncorrected data, are:

$$\Delta\alpha = 0.5517\ C_L$$

$$\Delta C_D = 0.0096\ {C_L}^2$$

The correction to the pitching-moment coefficient was negligible.

Constriction of the flow at subsonic speeds was taken into account in the manner outlined in reference 7. At a Mach number of 0.9, the correction amounted to a 2-percent increase in the Mach number over that determined from a calibration of the wind tunnel without a model in place.

For the tests at supersonic speeds, the reflection from the tunnel wall of the Mach wave originating at the nose of the body crossed the horizontal tail only at a Mach number of 1.2. It is believed that the resulting interference effects were small, and no corrections were made for tunnel-wall effects.

Stream variations.- Tests at subsonic speeds in the 6- by 6-foot supersonic wind tunnel have indicated a small stream curvature and an inclination in the pitch plane of the model. No correction for this stream curvature has been made. A survey of the airstream at supersonic speeds, reported in reference 5, has shown curvature and inclination only in the yaw plane of the model. The effects of this curvature on the measured aerodynamic characteristics of the model are not known but are believed to be small, as they were shown to be in the case of reference 8.

Surveys at both subsonic and supersonic speeds indicated that there is a static-pressure variation of sufficient magnitude in the wind-tunnel test section to affect the drag measurements. Corrections were added to the measured drag coefficients, therefore, to account for the longitudinal force resulting from the static-pressure variation. The maximum corrections were +0.0007 at a Mach number of 0.9 and -0.0008 at a Mach number of 1.3.

Support interference.- At subsonic speeds, the effects of support interference on the aerodynamic characteristics of the model are not known. It is believed that such effects consist primarily of a change in the pressure at the base of the model. In an effort to correct at least partially for this support interference, the base pressure was measured and the drag data adjusted to correspond to a base pressure equal to the static pressure of the free stream.

At supersonic speeds, the interference of the sting on a body of a body-sting combination similar to that of the present model is shown by reference 9 to be confined to a change in base pressure. The above-mentioned adjustment of the drag for pressure at the base of the model, therefore, was applied also to the data obtained at supersonic speeds.

Precision

The uncertainties involved in determining dynamic pressure and in measuring forces with the strain-gage balance are described fully in reference 10. The following table lists the maximum uncertainty introduced into each corrected coefficient by the known uncertainties in the measurements:

Quantity	Uncertainty
Lift coefficient	±0.002
Drag coefficient	±0.0010
Pitching-moment coefficient	±0.002
Hinge-moment coefficient	±0.005
Mach number	±0.01
Reynolds number	$\pm 0.03 \times 10^6$
Angle of attack	$\pm 0.10^\circ$
Horizontal-tail deflection	$\pm 0.25^\circ$

RESULTS

The experimental results obtained during the investigation are presented in tables I and II for the complete range of test variables. The results for the wing-body and the wing-body-tail combinations without leading-edge chord extensions are presented in table I, those for the combinations with chord extensions in table II. For the purpose of analysis, a portion of these data is presented in graphical form.

The effect of the chord extensions on the variation of pitching-moment coefficient with lift coefficient for the model with the horizontal tail removed (but with the vertical fins attached to the wing) is shown in figure 3 for several subsonic and supersonic Mach numbers. The effect of the chord extensions on the pitching-moment, lift, and drag characteristics of the wing-body-tail combination for a nominal horizontal-tail deflection of zero is shown in figure 4 for the same Mach numbers.

In order to permit a more detailed evaluation of the effect of the chord extensions on the drag characteristics, the variation with Mach number of the drag coefficient at various lift coefficients and the variation with Mach number of the maximum lift-drag ratio are presented in figures 5 and 6, respectively.

The variation of the pitching-moment coefficient with horizontal-tail deflection is shown in figure 7. The variations of hinge-moment coefficient with horizontal-tail deflection and with angle of attack are presented in figures 8 and 9 for the model with chord extensions. A study of the data for the combinations with and without chord extensions showed essentially no difference in the control-effectiveness and hinge-moment characteristics as a result of adding the chord extensions. Therefore, only the results for the wing-body-tail combination with chord extensions are presented graphically. The data presented in these figures have been limited to Mach numbers of 0.6, 0.9, 1.3, and 1.9, since these were considered sufficient to show the variations through the Mach number range. Horizontal-tail deflections noted in figure 8 are nominal settings of the tail surfaces. The actual deflection angles, which changed slightly under aerodynamic load, can be obtained from table II.

DISCUSSION

In the section to follow, two features of the data will be discussed. First, the effects of the chord extensions on the basic aerodynamic characteristics of the wing-body and the wing-body-tail combinations will be considered. A brief discussion of the control-surface characteristics will follow.

Basic Characteristics

Pitching moment.- As was noted previously, some loss in stability was shown to exist for the wing-body combination at moderate-to-high lift coefficients at subsonic speeds during a previous investigation (ref. 1). With the center of gravity at 35-percent mean aerodynamic chord, the loss in stability was of such magnitude as to result in an unstable variation of pitching-moment coefficient at Mach numbers of 0.6 and 0.8 for the model with the horizontal tail removed. (See fig. 3.) With the horizontal tail added to the wing-body combination (fig. 4(a)), the unstable variation at these subsonic speeds still existed. That the longitudinal instability of the wing-body combination was due largely to the instability of the wing-body combination can be determined from a comparison of figures 3 and 4(a). As indicated in figure 3, addition of the chord extensions improved the pitching-moment characteristics of the wing-body combination, the instability being either eliminated ($M = 0.8$) or delayed to a higher lift coefficient ($M = 0.6$). A similar improvement occurred for the wing-body-tail combination (fig. 4(a)). It should be noted that addition of the chord extensions had little effect on the tail contribution to the stability. At supersonic speeds, the chord extensions had only small effect on the pitching-moment characteristics.

Lift.- The results for the wing-body-tail combination without chord extensions (fig. 4(b)) showed a range of angle of attack near 8° at Mach numbers of 0.6 and 0.8 in which the lift-curve slope was considerably less than at other angles of attack. This decrease in lift-curve slope appeared initially at about the same lift coefficient as the onset of pitching-moment instability. With chord extensions installed, the lift was maintained up to angles of attack of the order of 16°. The improvement in the lift characteristics is believed to be due primarily to the ability of the chord extensions to improve the flow over the wing tips. At supersonic speeds, the chord extensions had little effect on the lift characteristics. The slight increase in lift-curve slope shown in figure 4(b) may have been due to the increased area provided by the chord extensions.

Drag.- The drag results, presented in figures 4(c) and 5, indicate that the addition of the chord extensions increased slightly the minimum drag coefficient throughout the speed range investigated, although this increase was of the same order of magnitude as the maximum uncertainty of measurement. On the other hand, at lift coefficients greater than 0.2, the chord extensions reduced significantly the drag coefficients at subsonic speeds and at a Mach number of 1.3. The reduction in drag at these lift coefficients is believed to be due, primarily, to the small amount of camber which resulted from the drooping of the chord extensions. Drooping the leading edge tends to maintain high lifting pressures on that portion of the wing and to provide a component of force in the thrust direction. At Mach numbers greater than 1.5, the beneficial effect of the chord extensions on the drag no longer existed. At the higher lift coefficients, the apparent benefit of the chord extensions shown at these Mach numbers can be attributed to the increased area provided by the chord extensions.

The effect of the chord extensions on the maximum lift-drag ratio is shown in figure 6. At a Mach number of 0.6 a large increase in $(L/D)_{max}$ was realized, the improvement decreasing with increasing Mach number. In the supersonic speed range at Mach numbers of 1.5 and above, decreased lift-drag ratios were incurred with the chord extensions installed.

Control-Surface Characteristics

The following section is devoted to a discussion of the control-surface characteristics of the tail when used in conjunction with the wing-body combination with chord extensions. As pointed out in Results, a study of the data for the models with and without chord extensions showed essentially no difference in the control-effectiveness and hinge-moment characteristics. Thus, statements made in the following discussion also apply to the characteristics of the tail when used with the wing-body combination without chord extensions.

Control effectiveness.- Increasing control effectiveness with increasing Mach number was indicated for the subsonic speed range, as shown in figure 7. The variation of pitching-moment coefficient with horizontal-tail deflection was linear throughout only a moderate range of deflection angles in this speed range. However, for an airplane with its center of gravity at 35 percent of the mean aerodynamic chord, this moderate range is sufficient to provide static longitudinal balance throughout the range of lift coefficients investigated. A large decrease in the effectiveness of the horizontal tail occurred as the Mach number was increased from subsonic to supersonic speed. At supersonic speeds, the variation of pitching moment with angle of deflection was linear up to fairly large negative angles, the control effectiveness decreasing with increasing Mach number.

Hinge-moment coefficient.- As noted above, static longitudinal balance could be obtained at subsonic speeds with small deflection of the control surfaces. As shown in figures 8 and 9, the variations of hinge-moment coefficient with angle of attack and with tail deflection were small throughout the range of deflection angles required for balance.

As a result, the control forces required to deflect the horizontal-tail surfaces at subsonic speeds would be expected to be small. If, however, the center-of-gravity position were moved forward so that larger deflection angles were necessary for balance, larger variation of the hinge-moment coefficient with deflection angle would be encountered and larger control forces would be required.

At supersonic speeds, the magnitude of the variations of hinge-moment coefficient with angle of attack and with tail deflection increased greatly. As a result, large control forces would be expected to be required in this speed range. For example, if one considered the present wing-body-tail combination to be a 1/12-scale model of an airplane with a wing loading of 45 pounds per square foot, the control moment at a Mach number of 1.5 would be of the order of 30 times that at a Mach number of 0.6 for level flight at an altitude of 30,000 feet.

CONCLUSIONS

Experimental wind-tunnel results for a wing-body-tail combination employing a 3-percent-thick triangular wing of aspect ratio 3 in conjunction with an unswept, all-movable horizontal tail show that the aerodynamic characteristics were improved at moderate-to-high lift coefficients at subsonic speeds and only slightly changed at supersonic speeds, due to the addition of leading-edge chord extensions to the wing. The results of the wind-tunnel investigation are given below.

Pitching moment.- High-lift instability which occurred at subsonic speeds at Mach numbers of 0.6 and 0.8 was either eliminated ($M = 0.8$) or delayed to higher lift coefficients ($M = 0.6$) through the addition of chord extensions. Only a small effect at supersonic Mach numbers resulted from the addition of chord extensions.

Lift.- The addition of chord extensions eliminated undesirable lift characteristics at subsonic speeds and had little effect on the lift at supersonic speeds. Whereas the variation of lift coefficient with angle of attack for the wing-body-tail combination without chord extensions decreased rapidly at an angle of attack of about 8° at Mach numbers of 0.6 and 0.8, the variation for the combination with chord extensions had no inflection and lift was maintained up to angles of about 16°.

Drag.- The minimum drag was increased slightly throughout the Mach number range with the addition of chord extensions. At subsonic speeds, the drag due to lift was reduced, and the maximum lift-drag ratios were, in consequence, increased. The greatest increase in $(L/D)_{max}$ was obtained at $M = 0.6$, the improvement decreasing with Mach number. At supersonic Mach numbers of 1.5 and greater, no improvement in drag due to lift was realized through the addition of chord extensions. Maximum lift-drag ratios obtained in this Mach number range were, as a result, decreased slightly.

Control effectiveness.- The control effectiveness of the horizontal tail was essentially unchanged by the addition of chord extensions. At subsonic speeds the effectiveness increased with increasing Mach number. A large decrease in effectiveness occurred as the Mach number was increased from subsonic to supersonic speed. At supersonic speeds the effectiveness decreased with increasing Mach number.

Hinge moment.- Essentially no changes in the hinge-moment characteristics of the horizontal tail occurred due to the addition of chord extensions. The variation of the hinge-moment coefficient with angle of attack and with horizontal-tail deflection was such that the control forces required to deflect the horizontal tail would be much larger at supersonic speeds than at subsonic speeds.

Ames Aeronautical Laboratory
National Advisory Committee for Aeronautics
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TABLE I.- AERODYNAMIC CHARACTERISTICS OF A MODEL EMPLOYING A TRIANGULAR WING OF ASPECT RATIO 3 AND AN ALL-MOVABLE HORIZONTAL TAIL; $R=3.8 \times 10^6$

(a) Characteristics for wing-body combination with horizontal tail removed (vertical fins not removed)

M	α	C_L	C_D	C_m
0.60	-4.28	-0.260	0.0251	0.004
	-2.14	-.133	.0126	.004
	-.52	-.044	.0089	.003
	.52	.014	.0084	.002
	2.11	.104	.0111	.001
	4.25	.231	.0218	0
	6.39	.355	.0416	.002
	8.53	.474	.0710	.010
	10.66	.582	.1096	.016
	12.77	.662	.1475	.030
	14.86	.741	.1940	.033
	16.97	.827	.2487	.034
	18.02	.870	.2789	.034
0.80	-4.34	-.286	.0275	.009
	-2.17	-.146	.0130	.007
	-.53	-.045	.0087	.004
	.53	.019	.0084	.002
	2.14	.117	.0114	-.001
	4.31	.258	.0241	-.005
	6.49	.396	.0475	-.005
	8.65	.514	.0788	.005
	10.78	.609	.1155	.007
	12.91	.707	.1612	.006
	15.03	.799	.2140	.002

M	α	C_L	C_D	C_m
0.90	-4.38	-0.307	0.0290	0.016
	-2.18	-.154	.0130	.016
	-.53	-.047	.0084	.005
	.50	.022	.0080	.001
	2.16	.130	.0117	-.005
	4.35	.285	.0263	-.012
	6.55	.434	.0528	-.015
	8.73	.564	.0884	-.016
	10.85	.660	.1294	-.017
1.30	-4.18	-.258	.0322	.040
	-2.09	-.132	.0193	.021
	-.50	-.062	.0242	.012
	.49	.021	.0145	-.002
	2.08	.115	.0185	-.016
	4.17	.240	.0307	-.036
	6.26	.364	.0511	-.054
	8.35	.480	.0797	-.073
	10.43	.588	.1161	-.087
1.50	-4.16	-.225	.0297	.034
	-2.08	-.116	.0179	.018
	-.50	-.033	.0138	.006
	.49	.020	.0137	-.001
	2.07	.102	.0173	-.014
	4.16	.210	.0283	-.030
	6.24	.314	.0462	-.045

M	α	C_L	C_D	C_m
1.50	8.32	0.415	0.0712	-0.062
	10.39	.510	.1024	-.077
	12.47	.601	.1401	-.092
1.70	-4.14	-.197	.0280	.029
	-2.07	-.103	.0176	.016
	-.50	-.089	.0139	.005
	.48	.017	.0137	-.002
	2.06	.090	.0170	-.012
	4.14	.185	.0271	-.026
	6.21	.274	.0427	-.039
	8.28	.363	.0648	-.053
	10.34	.447	.0926	-.067
	12.41	.529	.1260	-.079
	14.46	.580	.1581	-.087
1.90	-4.13	-.175	.0264	.023
	-2.06	-.091	.0174	.012
	-.49	-.027	.0145	.004
	.48	.013	.0142	-.002
	2.05	.078	.0167	-.011
	4.11	.161	.0251	-.023
	6.18	.240	.0389	-.034
	8.24	.319	.0584	-.046
	10.30	.395	.0831	-.058
	12.36	.469	.1129	-.068
	14.42	.540	.1475	-.078
	15.97	.593	.1771	-.084

(b) Characteristics for wing-body-tail combination; $\delta_n = +4^\circ$

M	α	C_L	C_D	C_m	C_h	δ
0.60	-4.31	-0.225	0.0256	-0.026	0.015	4.0
	-2.15	-.087	.0140	-.033	.017	4.0
	-.48	.014	.0117	-.040	.018	4.0
	.53	.077	.0126	-.045	.018	4.0
	2.14	.178	.0178	-.053	.018	4.0
	4.29	.314	.0327	-.060	.015	4.0
	6.44	.448	.0576	-.063	.010	4.0
	8.59	.572	.0911	-.059	.003	4.0
	10.72	.689	.1326	-.058	.002	4.0
	12.83	.774	.1763	-.047	.001	4.0
	14.94	.869	.2314	-.054	-.006	4.0
	17.05	.968	.2957	-.061	-.015	4.0
	18.11	1.019	.3312	-.064	-.021	4.0
0.80	-4.37	-.239	.0268	-.028	.021	4.0
	-2.19	-.093	.0147	-.038	.023	4.0
	-.48	.020	.0122	-.048	.024	4.0
	.54	.089	.0132	-.054	.024	4.0
	2.17	.198	.0191	-.063	.024	4.0
	4.35	.344	.0358	-.071	.022	4.0
	6.53	.489	.0638	-.076	.015	4.0
	8.70	.611	.0995	-.070	.007	4.0
	10.83	.724	.1413	-.075	.004	4.0
	12.96	.883	.1942	-.083	-.004	4.0

M	α	C_L	C_D	C_m	C_h	δ
0.90	-4.41	-0.257	0.0306	-0.028	0.014	4.0
	-2.21	-.100	.0169	-.042	.007	4.0
	-.49	.023	.0132	-.054	.004	4.0
	.54	.096	.0145	-.062	.003	4.0
	2.19	.214	.0214	-.074	0	4.0
	4.38	.375	.0406	-.086	0	4.0
	6.58	.532	.0717	-.095	-.001	4.0
	8.77	.677	.1142	-.105	-.006	4.0
	10.91	.794	.1642	-.120	-.027	4.0
	12.39	.887	.2071	-.143	-.044	3.9
1.30	-4.19	-.243	.0343	.024	-.006	4.0
	-2.10	-.106	.0218	-.006	-.014	4.0
	-.56	-.010	.0180	-.028	-.021	4.0
	.48	.059	.0184	-.044	-.024	4.0
	2.04	.159	.0239	-.067	-.032	3.9
	4.13	.299	.0395	-.101	-.041	3.9
	6.21	.424	.0626	-.131	-.050	3.9
1.50	-4.17	-.213	.0312	.024	-.004	4.0
	-2.09	-.096	.0197	-.002	-.013	4.0
	-.72	-.006	.0162	-.022	-.019	4.0
	.48	.052	.0166	-.036	-.024	3.9
	2.05	.143	.0218	-.056	-.031	3.9

M	α	C_L	C_D	C_m	C_h	δ
1.50	4.12	0.264	0.0362	-0.085	-0.040	3.9
	6.20	.379	.0574	-.111	-.049	3.9
	7.81	.458	.0783	-.130	-.055	3.9
1.70	-4.15	-.186	.0290	.020	-.004	4.0
	-2.06	-.087	.0192	-.001	-.011	4.0
	-.54	-.007	.0161	-.019	-.017	4.0
	.48	.044	.0163	-.030	-.022	4.0
	2.04	.125	.0210	-.047	-.028	3.9
	4.11	.229	.0334	-.071	-.038	3.9
	6.18	.329	.0521	-.093	-.048	3.9
	8.25	.426	.0776	-.116	-.056	3.9
1.90	-4.13	-.167	.0275	.015	-.002	4.0
	-2.07	-.076	.0191	-.003	-.009	4.0
	-.54	-.008	.0168	-.017	-.015	4.0
	.47	.037	.0172	-.026	-.019	4.0
	2.03	.106	.0207	-.040	-.027	3.9
	4.10	.198	.0312	-.058	-.037	3.9
	6.16	.284	.0473	-.077	-.046	3.9
	8.21	.370	.0696	-.096	-.055	3.9
	10.27	.451	.0972	-.114	-.068	3.9

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TABLE I.- AERODYNAMIC CHARACTERISTICS OF A MODEL EMPLOYING A TRIANGULAR WING OF ASPECT RATIO 3 AND AN ALL-MOVABLE HORIZONTAL TAIL; $R=3.8 \times 10^6$ - Continued

(c) Characteristics for wing-body-tail combination; $\delta_n = +2^{\circ}$

M	α	C_L	C_D	C_m	C_h	δ
0.60	-4.27	-0.240	0.0245	-0.009	0.008	2.1
	-2.16	-.108	.0130	-.015	.010	2.1
	-.53	-.011	.0099	-.022	.010	2.1
	.51	.052	.0103	-.027	.011	2.1
	2.13	.153	.0148	-.034	.013	2.1
	4.28	.291	.0286	-.042	.014	2.1
	6.43	.426	.0524	-.046	.016	2.1
	8.58	.554	.0861	-.043	.016	2.1
	10.71	.669	.1268	-.042	.014	2.1
	12.81	.747	.1702	-.031	.013	2.1
	14.92	.847	.2255	-.040	.008	2.1
	17.04	.958	.2923	-.052	-.002	2.1
	18.09	.999	.3247	-.056	-.008	2.1
0.80	-4.33	-.259	.0267	-.007	.011	2.1
	-2.19	-.115	.0134	-.016	.012	2.1
	-.54	-.007	.0100	-.026	.015	2.1
	.52	.062	.0103	-.033	.016	2.1
	2.16	.174	.0158	-.043	.019	2.1
	4.34	.324	.0317	-.053	.021	2.1
	6.52	.471	.0589	-.060	.021	2.1
	8.69	.595	.0946	-.056	.022	2.1
	10.81	.694	.1352	-.059	.022	2.1
	12.96	.814	.1897	-.074	.028	2.1

M	α	C_L	C_D	C_m	C_h	δ
0.90	-4.37	-0.279	0.0289	-0.003	0.017	2.1
	-2.21	-.123	.0141	-.016	.016	2.1
	-.55	-.007	.0103	-.026	.014	2.1
	.53	.067	.0110	-.037	.013	2.1
	2.18	.187	.0171	-.050	.010	2.1
	4.38	.350	.0352	-.065	.009	2.1
	6.59	.516	.0668	-.074	.005	2.1
	8.76	.651	.1068	-.086	-.002	2.1
1.30	-4.19	-.258	.0337	.038	.004	2.1
	-2.09	-.119	.0208	.008	-.003	2.1
	-.55	-.019	.0167	-.014	-.010	2.1
	.48	.047	.0166	-.029	-.014	2.1
	2.06	.151	.0220	-.052	-.020	2.1
	4.14	.290	.0372	-.086	-.029	2.0
	6.23	.427	.0609	-.116	-.037	2.0
	7.18	.486	.0747	-.130	-.042	2.0
1.50	-4.16	-.223	.0302	.034	.004	2.1
	-2.08	-.104	.0186	.006	-.003	2.1
	-.54	-.018	.0146	-.011	-.009	2.1
	.48	.041	.0148	-.024	-.013	2.1
	2.05	.133	.0198	-.044	-.020	2.1

M	α	C_L	C_D	C_m	C_h	δ
1.50	4.13	0.252	0.0335	-0.072	-.029	2.0
	6.21	.367	.0548	-.099	-.038	2.0
	8.28	.477	.0824	-.126	-.046	2.0
1.70	-4.14	-.195	.0263	.029	.005	2.1
	-2.07	-.092	.0181	.007	-.002	2.1
	-.54	-.015	.0147	-.009	-.008	2.1
	.48	.035	.0148	-.020	-.012	2.1
	2.05	.116	.0192	-.036	-.018	2.1
	4.12	.218	.0310	-.060	-.027	2.0
	6.18	.317	.0490	-.083	-.036	2.0
	8.25	.414	.0737	-.105	-.044	2.0
	10.11	.497	.1012	-.125	-.052	2.0
1.90	-4.18	-.171	.0272	.022	.007	2.1
	-2.06	-.081	.0185	.004	0	2.1
	-.53	-.013	.0161	-.009	-.006	2.1
	.48	.030	.0162	-.018	-.011	2.1
	2.04	.100	.0194	-.032	-.018	2.1
	4.10	.190	.0294	-.050	-.027	2.0
	6.16	.276	.0450	-.068	-.035	2.0
	8.21	.361	.0666	-.087	-.043	2.0
	10.27	.441	.0935	-.104	-.051	2.0
	12.33	.521	.1265	-.122	-.059	2.0

(d) Characteristics for wing-body-tail combination; $\delta_n = 0^{\circ}$

M	α	C_L	C_D	C_m	C_h	δ
0.60	-4.27	-0.266	0.0258	0.010	0.004	0.1
	-2.11	-.131	.0133	.004	.004	.1
	-.50	-.035	.0097	-.003	.002	.1
	.56	.030	.0095	-.008	.003	.1
	2.17	.129	.0131	-.016	.004	.1
	4.30	.264	.0254	-.023	.005	.1
	6.48	.400	.0482	-.027	.008	.1
	8.63	.525	.0802	-.023	.010	.1
	10.77	.645	.1228	-.023	.012	.1
	12.84	.718	.1615	-.011	.012	.1
	14.93	.822	.2160	-.021	.013	.1
	17.02	.928	.2793	-.035	.011	.1
	18.06	.978	.3136	-.043	.005	.1
0.80	-4.32	-.287	.0280	.015	.004	.1
	-2.14	-.140	.0138	.005	.003	.1
	-.51	-.036	.0097	-.004	.003	.1
	.57	.035	.0096	-.011	.003	.1
	2.20	.144	.0137	-.020	.005	.1
	4.36	.290	.0280	-.031	.008	.1
	6.57	.441	.0544	-.038	.011	.1
	8.73	.562	.0880	-.033	.014	.1
	10.86	.659	.1271	-.036	.014	.1
	12.98	.783	.1805	-.051	.018	.1

M	α	C_L	C_D	C_m	C_h	δ
0.90	-4.36	-0.311	0.0307	0.020	0.004	0.1
	-2.16	-.150	.0144	.008	.006	.1
	-.48	-.036	.0099	-.002	.007	.1
	.58	.040	.0098	-.011	.008	.1
	2.22	.159	.0146	-.024	.008	.1
	4.40	.319	.0313	-.039	.010	.1
	6.63	.480	.0609	-.049	.011	.1
	8.81	.621	.1007	-.060	.008	.1
1.30	-4.16	-.274	.0347	.054	.011	.1
	-2.06	-.132	.0206	.023	.002	.1
	-.45	-.031	.0160	.001	-.003	.1
	.56	.035	.0161	-.014	-.008	.1
	2.12	.139	.0210	-.038	-.015	.1
	4.19	.277	.0354	-.070	-.023	.1
	6.31	.416	.0590	-.102	-.032	0
	8.39	.542	.0909	-.132	-.041	0
1.50	-4.14	-.239	.0312	.047	.011	0
	-2.05	-.116	.0184	.020	.001	0
	-.45	-.028	.0142	.001	-.002	.1
	.56	.032	.0143	-.012	-.007	.1
	2.11	.124	.0188	-.033	-.015	.1

M	α	C_L	C_D	C_m	C_h	δ
1.50	4.18	0.243	0.0319	-0.060	-0.023	0.1
	6.28	.359	.0525	-.087	-.032	0
	8.35	.470	.0806	-.114	-.041	.1
1.70	-4.13	-.207	.0292	.039	.011	.1
	-2.07	-.101	.0182	.016	.002	.1
	-.44	-.023	.0145	0	-.003	.1
	.56	.029	.0144	-.012	-.007	.1
	2.11	.110	.0185	-.029	-.014	.1
	4.17	.212	.0298	-.050	-.022	.1
	6.26	.313	.0479	-.073	-.032	0
	8.33	.411	.0725	-.095	-.040	0
	10.40	.502	.1033	-.116	-.049	0
1.90	-4.11	-.180	.0279	.029	.011	.1
	-2.04	-.088	.0186	.012	.002	.1
	-.44	-.020	.0160	-.001	-.002	.1
	.55	.026	.0159	-.011	-.007	.1
	2.10	.095	.0189	-.024	-.014	.1
	4.15	.183	.0284	-.042	-.024	0
	6.24	.270	.0440	-.059	-.031	0
	8.30	.355	.0654	-.076	-.041	0
	10.36	.435	.0980	-.095	-.049	0
	12.39	.513	.1238	-.112	-.057	0

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TABLE I.- AERODYNAMIC CHARACTERISTICS OF A MODEL EMPLOYING A TRIANGULAR WING OF ASPECT RATIO 3 AND AN ALL-MOVABLE HORIZONTAL TAIL; R=3.8 x 10^6 - Continued

(e) Characteristics for wing-body-tail combination; δ_n = -2°

M	α	C_L	C_D	C_m	C_h	δ
0.60	-4.29	-0.283	0.0273	0.026	0	-1.9
	-2.14	-.150	.0139	.020	.001	-1.9
	-.52	-.053	.0099	.013	.002	-1.9
	.52	.010	.0095	.008	.002	-1.9
	2.11	.106	.0126	.002	-.001	-1.9
	4.26	.243	.0243	-.007	-.001	-1.9
	6.41	.377	.0461	-.010	.002	-1.9
	8.56	.504	.0773	-.006	.003	-1.9
	10.69	.617	.1168	-.005	.005	-1.9
	12.79	.696	.1569	.007	.005	-1.9
	14.90	.796	.2096	-.002	.007	-1.9
	17.01	.900	.2718	-.016	.010	-1.9
	18.08	.959	.3078	-.024	.011	-1.9
0.80	-4.35	-.309	.0297	.033	0	-1.9
	-2.17	-.162	.0144	.024	.001	-1.9
	-.53	-.056	.0097	.015	.002	-1.9
	.53	.012	.0093	.009	0	-1.9
	2.14	.118	.0127	-.001	0	-1.9
	4.32	.267	.0263	-.011	0	-1.9
	6.49	.411	.0508	-.017	.002	-1.9
	8.66	.536	.0841	-.013	.004	-1.9
	10.79	.634	.1220	-.013	.004	-1.9
	12.93	.750	.1736	-.025	.007	-1.9
	14.08	.818	.2055	-.039	.011	-1.9

M	α	C_L	C_D	C_m	C_h	δ
0.90	-4.39	-0.335	0.0327	0.042	0.003	-1.9
	-2.19	-.172	.0152	.028	.002	-1.9
	-.54	-.058	.0099	.015	-.001	-1.9
	.54	.019	.0096	.007	0	-1.9
	2.16	.130	.0137	-.003	0	-1.9
	4.36	.292	.0293	-.016	.004	-1.9
	6.57	.452	.0575	-.025	.006	-1.9
	8.75	.593	.0963	-.034	.008	-1.9
1.30	-4.16	-.287	.0362	.070	.022	-1.9
	-2.08	-.147	.0215	.038	.013	-1.9
	-.50	-.043	.0162	.014	.006	-1.9
	.49	.021	.0160	0	.002	-1.9
	2.07	.122	.0200	-.022	-.002	-1.9
	4.16	.258	.0332	-.054	-.010	-1.9
	6.25	.395	.0554	-.085	-.018	-1.9
	8.33	.522	.0862	-.115	-.028	-2.0
1.50	-4.24	-.248	.0330	.058	.022	-1.9
	-2.07	-.128	.0193	.031	.012	-1.9
	-.49	-.035	.0145	.011	.005	-1.9
	.49	.020	.0143	-.001	.001	-1.9
	2.07	.110	.0182	-.021	-.003	-1.9
	4.14	.226	.0304	-.047	-.011	-1.9
	6.22	.342	.0496	-.074	-.019	-1.9

M	α	C_L	C_D	C_m	C_h	δ
1.50	8.29	0.453	0.0764	-0.100	-0.029	-2.0
	10.10	.545	.1057	-.122	-.037	-2.0
1.70	-4.13	-.215	.0301	.047	.021	-1.9
	-2.06	-.110	.0186	.025	.012	-1.9
	-.49	-.031	.0145	.008	.005	-1.9
	.48	.018	.0142	-.003	.001	-1.9
	2.06	.098	.0179	-.019	-.003	-1.9
	4.13	.200	.0287	-.041	-.011	-1.9
	6.20	.296	.0454	-.062	-.020	-1.9
	8.26	.394	.0692	-.084	-.028	-2.0
	10.32	.485	.0987	-.105	-.038	-2.0
1.90	-4.12	-.188	.0287	.037	.023	-1.9
	-2.06	-.097	.0190	.019	.013	-1.9
	-.49	-.027	.0160	.005	.006	-1.9
	.48	.015	.0159	-.003	.002	-1.9
	2.05	.085	.0184	-.017	-.003	-1.9
	4.11	.173	.0276	-.034	-.013	-1.9
	6.17	.259	.0423	-.051	-.021	-1.9
	8.23	.343	.0630	-.069	-.029	-2.0
	10.28	.423	.0890	-.086	-.037	-2.0
	12.34	.502	.1205	-.102	-.045	-2.0
	14.40	.579	.1578	-.118	-.052	-2.0

(f) Characteristics for wing-body-tail combination; δ_n = -4°

M	α	C_L	C_D	C_m	C_h	δ
0.60	-4.29	-0.311	0.0303	0.045	-0.011	-3.9
	-2.14	-.180	.0159	.039	-.009	-3.9
	-.49	-.079	.0107	.032	-.008	-3.9
	.55	-.016	.0097	.027	-.007	-3.9
	2.18	.083	.0123	.019	-.005	-3.9
	4.26	.218	.0227	.011	-.004	-3.9
	6.46	.354	.0440	.007	-.003	-3.9
	8.60	.476	.0737	.011	-.002	-3.9
	10.75	.593	.1129	.012	-.001	-3.9
	12.82	.669	.1522	.025	0	-3.9
0.80	-4.35	-.339	.0331	.057	-.015	-3.9
	-2.16	-.196	.0166	.048	-.013	-3.9
	-.51	-.088	.0097	.038	-.011	-3.9
	.54	-.015	.0096	.031	-.008	-3.9
	2.22	.095	.0126	.020	-.006	-3.9
	4.34	.239	.0249	.016	-.003	-3.9
	6.56	.391	.0496	.003	-.002	-3.9
	8.72	.509	.0811	.008	0	-3.9
	10.85	.607	.1185	.008	0	-3.9
0.90	-4.38	-.372	.0376	.073	.007	-3.9
	-2.18	-.209	.0182	.057	.001	-3.9
	-.51	-.091	.0112	.044	-.002	-3.9

M	α	C_L	C_D	C_m	C_h	δ
0.90	0.55	-0.014	0.0100	0.034	-0.003	-3.9
	2.24	.108	.0135	.020	-.005	-3.9
	4.38	.265	.0277	.005	-.003	-3.9
	6.61	.424	.0551	-.004	-.002	-3.9
	8.79	.570	.0939	-.014	-.002	-3.9
1.30	-4.14	-.303	.0387	.086	.027	-3.8
	-2.05	-.161	.0230	.054	.021	-3.9
	-.45	-.057	.0171	.030	.014	-3.9
	.61	.012	.0166	.015	.010	-3.9
	2.13	.111	.0202	-.008	.004	-3.9
	4.21	.246	.0327	-.039	-.003	-3.9
	6.33	.381	.0542	-.070	-.010	-3.9
	8.41	.509	.0844	-.100	-.018	-3.9
	10.19	.608	.1165	-.121	-.025	-4.0
1.50	-4.13	-.261	.0347	.073	.029	-3.8
	-2.04	-.139	.0205	.044	.021	-3.9
	-.44	-.047	.0152	.023	.014	-3.9
	.61	.014	.0149	.010	.010	-3.9
	2.13	.102	.0185	-.010	.002	-3.9
	4.19	.218	.0226	-.036	-.004	-3.9
	6.30	.334	.0494	-.062	-.012	-3.9
	8.37	.442	.0753	-.088	-.020	-3.9
	10.45	.547	.1086	-.113	-.029	-4.0

M	α	C_L	C_D	C_m	C_h	δ
1.70	-4.12	-0.227	0.0320	0.058	0.029	-3.8
	-2.04	-.122	.0198	.035	.020	-3.9
	-.44	-.040	.0152	.018	.013	-3.9
	.60	.013	.0147	.006	.009	-3.9
	2.11	.090	.0179	-.010	.002	-3.9
	4.17	.191	.0283	-.031	-.006	-3.9
	6.27	.290	.0450	-.053	-.014	-3.9
	8.34	.387	.0677	-.075	-.022	-3.9
	10.41	.479	.0975	-.095	-.031	-4.0
	12.44	.567	.1325	-.115	-.040	-4.0
1.90	-4.10	-.195	.0296	.045	.028	-3.8
	-2.03	-.105	.0195	.027	.019	-3.9
	-.44	-.035	.0161	.013	.011	-3.9
	.59	.012	.0159	.004	.006	-3.9
	2.10	.077	.0182	-.009	0	-3.9
	4.15	.165	.0268	-.026	-.008	-3.9
	6.24	.250	.0413	-.043	-.017	-3.9
	8.30	.334	.0614	-.060	-.025	-4.0
	10.36	.414	.0871	-.077	-.033	-4.0
	12.39	.491	.1179	-.093	-.040	-4.0
	14.43	.565	.1536	-.108	-.047	-4.0
	15.46	.604	.1743	-.115	-.052	-4.0

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TABLE I.- AERODYNAMIC CHARACTERISTICS OF A MODEL EMPLOYING A TRIANGULAR WING OF ASPECT RATIO 3 AND AN ALL-MOVABLE HORIZONTAL TAIL; $R=3.8 \times 10^6$ - Continued

(g) Characteristics for wing-body-tail combination; $\delta_n = -8^\circ$

M	α	C_L	C_D	C_m	C_h	δ
0.60	-4.32	-0.348	0.0387	0.074	0.008	-8.0
	-2.18	-.222	.0228	.071	.002	-8.0
	-.57	-.127	.0163	.066	-.003	-8.0
	.42	-.067	.0141	.062	-.007	-8.0
	2.10	.032	.0140	.056	-.011	-8.0
	4.27	.171	.0225	.046	-.013	-8.0
	6.42	.307	.0409	.042	-.011	-8.0
	8.56	.435	.0692	.044	-.010	-8.0
	10.65	.548	.1027	.045	-.008	-8.0
	12.80	.628	.1420	.059	-.008	-8.0
	14.86	.722	.1908	.050	-.005	-8.0
	16.98	.826	.2489	.057	-.003	-8.0
	18.04	.882	.2823	.029	-.002	-8.0
0.80	-4.38	-.385	.0430	.092	-.016	-8.0
	-2.20	-.241	.0241	.084	-.018	-8.0
	-.58	-.135	.0168	.076	-.019	-8.0
	.43	-.071	.0145	.071	-.020	-8.0
	2.13	.039	.0148	.062	-.020	-8.0
	4.33	.189	.0246	.051	-.019	-8.0
	6.51	.337	.0458	.043	-.017	-8.0
	8.67	.462	.0754	.048	-.015	-8.0
	10.80	.556	.1099	.050	-.024	-8.0
	12.89	.664	.1543	.038	-.009	-8.0
	15.02	.782	.2110	.015	-.003	-8.0
0.90	-4.40	-0.404	0.0467	0.105	0.012	-8.0
	-2.21	-.253	.0268	.097	.012	-8.0
	-.57	-.138	.0188	.086	.009	-8.0
	.43	-.072	.0164	.080	.008	-8.0
	2.17	.048	.0168	.068	.003	-8.0
	4.38	.214	.0287	.053	-.001	-8.0
	6.58	.370	.0525	.044	0	-8.0
	8.72	.508	.0864	.037	.003	-8.0
	10.85	.608	.1266	.031	.020	-8.0
1.30	-4.14	-.329	.0454	.110	.047	-7.9
	-2.05	-.190	.0283	.081	.039	-7.9
	-.49	-.088	.0212	.077	.033	-7.9
	.49	-.023	.0196	.044	.029	-7.9
	2.14	.083	.0222	.020	.022	-8.0
	4.19	.215	.0327	-.010	.017	-8.0
	6.27	.349	.0521	-.040	.009	-8.0
	8.36	.479	.0810	-.069	.002	-8.0
	10.44	.594	.1176	-.093	-.004	-8.0
1.50	-4.13	-.286	.0412	.097	.046	-7.9
	-2.05	-.162	.0251	.067	.038	-7.9
	-.49	-.070	.0186	.045	.033	-7.9
	.49	-.012	.0175	.033	.029	-7.9
	2.13	.079	.0202	.012	.022	-8.0
	4.17	.195	.0302	-.014	.013	-8.0
1.50	6.24	0.306	0.0475	-0.039	0.005	-8.0
	8.32	.418	.0726	-.064	-.001	-8.0
	10.39	.520	.1043	-.088	-.009	-8.0
	11.74	.587	.1292	-.103	-.015	-8.0
1.70	-4.12	-.244	.0368	.077	.047	-7.9
	-2.05	-.138	.0233	.053	.038	-7.9
	-.49	-.058	.0180	.035	.030	-7.9
	.49	-.007	.0171	.025	.025	-7.9
	2.12	.073	.0196	.008	.018	-8.0
	4.15	.171	.0285	-.013	.009	-8.0
	6.21	.267	.0438	-.033	.001	-8.0
	8.28	.363	.0659	-.052	-.005	-8.0
	10.35	.454	.0941	-.073	-.014	-8.0
	12.41	.542	.1266	-.093	-.023	-8.0
1.90	-4.11	-.212	.0336	.060	.044	-7.9
	-2.04	-.119	.0223	.041	.034	-7.9
	-.49	-.050	.0189	.028	.027	-7.9
	.48	-.005	.0177	.019	.022	-8.0
	2.10	.063	.0196	.006	.014	-8.0
	4.12	.150	.0274	-.011	.005	-8.0
	6.18	.232	.0408	-.026	-.008	-8.0
	8.24	.316	.0603	-.042	-.010	-8.0
	10.30	.396	.0853	-.058	-.019	-8.0
	12.36	.473	.1154	-.074	-.026	-8.1
	14.42	.549	.1509	-.088	-.033	-8.1

(h) Characteristics for wing-body-tail combination; $\delta_n = -12^\circ$

M	α	C_L	C_D	C_m	C_h	δ
0.60	-4.31	-0.348	0.0454	0.077	0.030	-12.0
	-2.17	-.224	.0299	.078	.027	-12.0
	-.57	-.134	.0236	.077	.024	-12.0
	.41	-.081	.0214	.076	.022	-12.0
	2.08	.011	.0208	.074	.017	-12.0
	4.25	.140	.0277	.071	.011	-12.0
	6.40	.272	.0445	.070	.007	-12.0
	8.55	.395	.0703	.075	.001	-12.0
	10.68	.507	.1028	.078	-.002	-12.0
	12.78	.587	.1377	.093	-.004	-12.0
	14.88	.674	.1817	.087	-.009	-12.0
0.80	-4.36	-.355	.0459	.074	.030	-12.0
	-2.19	-.221	.0292	.074	.029	-12.0
	-.57	-.124	.0229	.073	.029	-12.0
	.43	-.066	.0210	.073	.027	-12.0
	2.14	.034	.0212	.070	.022	-12.0
	4.33	.172	.0306	.067	.015	-12.0
	6.51	.313	.0510	.066	.007	-12.0
	8.67	.434	.0791	.073	.002	-12.0
	10.80	.528	.1123	.076	-.002	-12.0
	12.93	.628	.1561	.075	-.008	-12.0
0.90	-4.40	-.385	.0498	.088	.035	-11.9
	-2.20	-.232	.0306	.080	.033	-11.9
	-.56	-.124	.0234	.077	.031	-11.9
	.44	-.063	.0213	.074	.029	-11.9
0.90	2.16	0.037	0.0238	0.079	0.027	-12.0
	4.38	.183	.0358	.081	.017	-12.0
	6.58	.339	.0587	.074	.015	-12.0
	8.76	.472	.0919	.071	.014	-12.0
	10.89	.568	.1328	.075	.043	-11.9
1.30	-4.14	-.354	.0542	.133	.069	-11.9
	-2.04	-.214	.0364	.105	.060	-11.9
	-.47	-.113	.0287	.084	.054	-11.9
	.50	-.049	.0266	.070	.050	-11.9
	2.15	.056	.0281	.047	.041	-11.9
	4.24	.191	.0381	.017	.031	-11.9
	6.29	.322	.0553	-.011	.028	-11.9
	8.38	.452	.0827	-.039	.022	-12.0
	10.46	.567	.1180	-.064	.013	-12.0
	11.34	.611	.1352	-.072	.010	-12.0
1.50	-4.12	-.308	.0494	.116	.056	-11.9
	-2.04	-.193	.0335	.094	.053	-11.9
	-.48	-.097	.0257	.071	.048	-11.9
	.49	-.038	.0236	.056	.044	-11.9
	2.14	.056	.0252	.036	.040	-11.9
	4.18	.172	.0339	.009	.031	-11.9
	6.25	.284	.0497	-.016	.021	-12.0
	8.33	.394	.0732	-.040	.012	-12.0
	10.40	.498	.1040	-.064	.006	-12.0
	12.47	.597	.1420	-.086	0	-12.0
1.70	-4.11	-0.267	0.0448	0.098	0.062	-11.9
	-2.04	-.158	.0296	.073	.055	-11.9
	-.49	-.080	.0235	.054	.049	-11.9
	.49	-.027	.0220	.043	.044	-11.9
	2.12	.054	.0239	.027	.036	-11.9
	4.16	.154	.0319	.006	.025	-11.9
	6.23	.251	.0462	-.014	.015	-12.0
	8.29	.345	.0670	-.033	.006	-12.0
	10.36	.436	.0939	-.053	0	-12.0
	12.42	.525	.1276	-.072	-.009	-12.0
	13.82	.580	.1529	-.084	-.014	-12.0
1.90	-4.10	-.227	.0398	.077	.059	-11.9
	-2.04	-.136	.0277	.057	.049	-11.9
	-.49	-.066	.0231	.043	.040	-11.9
	.48	-.023	.0220	.035	.036	-11.9
	2.10	.048	.0234	.022	.029	-11.9
	4.13	.134	.0307	.005	.020	-12.0
	6.19	.217	.0434	-.010	.010	-12.0
	8.25	.298	.0618	-.026	.001	-12.0
	10.31	.379	.0861	-.040	-.005	-12.0
	12.36	.456	.1153	-.055	-.015	-12.0
	14.42	.531	.1500	-.069	-.021	-12.0
	16.18	.595	.1841	-.080	-.026	-12.1

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TABLE I.- AERODYNAMIC CHARACTERISTICS OF A MODEL EMPLOYING A TRIANGULAR WING OF ASPECT RATIO 3 AND AN ALL-MOVABLE HORIZONTAL TAIL; $R=3.8 \times 10^6$ - Continued

(i) Characteristics for wing-body-tail combination; $\delta_n = -16^\circ$

M	α	C_L	C_D	C_m	C_h	δ
0.60	-4.31	-0.332	0.0481	0.068	0.031	-16.0
	-2.16	-.208	.0331	.068	.030	-16.0
	-.56	-.118	.0279	.068	.030	-16.0
	.43	-.064	.0262	.067	.031	-16.0
	2.10	.024	.0268	.068	.031	-16.0
	4.26	.142	.0345	.073	.032	-16.0
	6.40	.265	.0512	.077	.029	-16.0
	8.55	.386	.0778	.086	.021	-16.0
	10.68	.493	.1092	.093	.016	-16.0
	12.78	.567	.1426	.109	.015	-16.0
	14.87	.644	.1839	.109	.010	-16.0
	16.97	.735	.2350	.104	.001	-16.0
	18.02	.779	.2624	.098	-.003	-16.0
0.80	-4.36	-.355	.0508	.076	.032	-16.0
	-2.18	-.216	.0338	.073	.031	-16.0
	-.56	-.118	.0277	.070	.031	-16.0
	.44	-.058	.0259	.068	.030	-16.0
	2.14	.042	.0266	.064	.031	-16.0
	4.33	.179	.0364	.062	.031	-16.0
	6.51	.320	.0777	.065	.031	-16.0
	8.67	.434	.0861	.074	.029	-16.0
	10.80	.531	.1201	.079	.026	-16.0
	12.92	.612	.1601	.085	.022	-16.0
	15.03	.700	.2089	.082	.001	-16.0
0.90	-4.40	-.385	.0551	.091	.038	-16.0

M	α	C_L	C_D	C_m	C_h	δ
0.90	-2.20	-0.231	0.0358	0.082	0.038	-16.0
	-.56	-.122	.0291	.077	.037	-16.0
	.45	-.058	.0270	.074	.037	-16.0
	2.18	.053	.0287	.068	.036	-16.0
	4.38	.207	.0405	.061	.035	-16.0
	6.59	.359	.0648	.058	.035	-16.0
	8.77	.495	.0996	.058	.034	-16.0
1.30	-3.09	-.307	.0552	.142	.080	-15.8
	-2.03	-.236	.0468	.128	.077	-15.8
	-.46	-.137	.0361	.107	.070	-15.9
	.50	-.074	.0355	.094	.066	-15.9
	2.15	.030	.0359	.070	.058	-15.9
	4.26	.167	.0446	.040	.046	-15.9
	6.30	.295	.0612	.013	.037	-15.9
	8.39	.423	.0872	-.013	.031	-15.9
	10.47	.535	.1210	-.035	.029	-15.9
	11.91	.610	.1488	-.050	.023	-16.0
1.50	-4.11	-.385	.0754	.133	.068	-15.9
	-2.03	-.206	.0423	.109	.062	-15.9
	-.47	-.116	.0344	.090	.057	-15.9
	.49	-.062	.0323	.078	.054	-15.9
	2.14	.030	.0329	.059	.049	-15.9
	4.23	.149	.0406	.032	.043	-15.9
	6.27	.261	.0551	.007	.036	-15.9
	8.34	.370	.0774	-.018	.026	-15.9

M	α	C_L	C_D	C_m	C_h	δ
1.50	10.41	0.473	0.1067	-0.041	0.018	-16.0
	12.48	.573	.1434	-.064	.010	-16.0
1.70	-4.10	-.285	.0546	.117	.062	-15.9
	-2.02	-.180	.0390	.095	.061	-15.9
	-.47	-.098	.0314	.075	.057	-15.9
	.49	-.048	.0292	.063	.054	-15.9
	2.12	.033	.0300	.046	.048	-15.9
	4.21	.135	.0372	.024	.038	-15.9
	6.23	.230	.0504	.004	.027	-15.9
	8.30	.323	.0704	-.015	.018	-16.0
	10.37	.413	.0964	-.034	.010	-16.0
	12.43	.501	.1284	-.053	.003	-16.0
	14.50	.583	.1665	-.069	-.003	-16.0
1.90	-4.09	-.246	.0478	.095	.073	-15.8
	-2.03	-.152	.0345	.074	.063	-15.9
	-.48	-.082	.0291	.059	.054	-15.9
	.48	-.038	.0276	.051	.049	-15.9
	2.10	.030	.0283	.038	.041	-15.9
	4.18	.119	.0349	.021	.031	-15.9
	6.20	.200	.0470	.006	.021	-16.0
	8.26	.281	.0648	-.010	.013	-16.0
	10.32	.361	.0881	-.024	.005	-16.0
	12.37	.437	.1167	-.037	-.002	-16.0
	14.43	.512	.1505	-.051	-.010	-16.0
	16.49	.586	.1899	-.064	-.016	-16.0

(j) Characteristics for wing-body-tail combination; $\delta_n = -20^\circ$

M	α	C_L	C_D	C_m	C_h	δ
0.60	-4.30	-0.331	0.0541	0.071	0.032	-19.9
	-2.16	-.208	.0394	.071	.030	-19.9
	-.56	-.118	.0335	.069	.030	-19.9
	.43	-.062	.0317	.069	.029	-19.9
	2.09	.024	.0315	.066	.029	-19.9
	4.26	.153	.0393	.066	.030	-19.9
	6.40	.276	.0564	.068	.032	-19.9
	8.54	.396	.0831	.077	.034	-19.9
	10.67	.496	.1148	.088	.035	-19.9
	12.77	.568	.1490	.108	.035	-19.9
	14.85	.632	.1907	.116	.032	-19.9
	16.95	.711	.2375	.118	.024	-19.9
	18.00	.756	.2659	.116	.019	-19.9
0.80	-4.36	-.361	.0577	.082	.037	-19.8
	-2.18	-.221	.0405	.078	.036	-19.8
	-.56	-.123	.0339	.075	.034	-19.8
	.44	-.062	.0320	.072	.034	-19.8
	2.14	.039	.0325	.068	.034	-19.8
	4.33	.179	.0421	.064	.034	-19.8
	6.50	.319	.0628	.063	.034	-19.8
	8.66	.438	.0914	.072	.034	-19.8
	10.80	.538	.1265	.076	.034	-19.8
	12.91	.619	.1675	.082	.034	-19.8
	15.02	.706	.2167	.080	.033	-19.9
	17.11	.770	.2655	.083	.023	-19.9
	18.17	.810	.2958	.082	.008	-19.9

M	α	C_L	C_D	C_m	C_h	δ
0.90	-4.38	-0.387	0.0629	0.098	0.046	-19.8
	-2.19	-.236	.0430	.089	.044	-19.8
	-.56	-.128	.0361	.084	.045	-19.8
	.45	-.063	.0340	.080	.045	-19.8
	2.16	.045	.0345	.073	.042	-19.8
	4.37	.201	.0468	.066	.040	-19.8
	6.57	.354	.0711	.061	.039	-19.8
	8.75	.492	.1055	.058	.041	-19.8
	10.89	.586	.1467	.070	.050	-19.8
1.30	-2.02	-.251	.0582	.144	.096	-19.7
	-.49	-.155	.0490	.126	.091	-19.7
	.51	-.095	.0467	.115	.088	-19.7
	2.15	.006	.0457	.093	.081	-19.7
	4.26	.143	.0527	.062	.072	-19.8
	6.35	.273	.0685	.034	.063	-19.8
	8.39	.396	.0929	.009	.056	-19.8
	10.47	.506	.1258	-.012	.051	-19.8
	12.55	.612	.1656	-.030	.044	-19.8
1.50	-2.09	-.221	.0530	.126	.082	-19.7
	.46	-.134	.0444	.109	.078	-19.7
	.49	-.081	.0418	.097	.074	-19.7
	2.14	.010	.0415	.078	.067	-19.8
	4.24	.127	.0485	.053	.059	-19.8
	6.32	.237	.0621	.029	.055	-19.8
	8.35	.345	.0826	.004	.052	-19.8

M	α	C_L	C_D	C_m	C_h	δ
1.50	10.42	0.449	0.1104	-0.019	0.043	-19.8
	12.49	.547	.1453	-.042	.033	-19.8
1.70	-4.09	-.297	.0650	.130	.077	-19.7
	-2.01	-.196	.0500	.111	.072	-19.7
	-.46	-.119	.0425	.096	.070	-19.7
	.49	-.070	.0398	.085	.069	-19.8
	2.12	.012	.0392	.066	.066	-19.8
	4.22	.116	.0447	.044	.059	-19.8
	6.28	.212	.0569	.022	.049	-19.8
	8.31	.305	.0753	.003	.040	-19.8
	10.37	.396	.1005	-.016	.031	-19.8
	12.44	.483	.1317	-.034	.021	-19.9
	14.50	.566	.1686	-.051	.013	-19.9
1.90	-4.08	-.265	.0607	.115	.066	-19.8
	-2.02	-.171	.0457	.094	.071	-19.8
	-.47	-.100	.0390	.079	.067	-19.8
	.48	-.057	.0369	.070	.061	-19.8
	2.11	.013	.0365	.055	.052	-19.8
	4.19	.103	.0422	.037	.040	-19.8
	6.25	.184	.0535	.021	.031	-19.8
	8.27	.265	.0706	.006	.023	-19.9
	10.33	.345	.0955	-.009	.015	-19.9
	12.39	.421	.1212	-.022	.007	-19.9
	14.45	.494	.1540	-.035	.004	-19.9
	16.51	.568	.1924	-.048	0.	-19.9

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TABLE I.- AERODYNAMIC CHARACTERISTICS OF A MODEL EMPLOYING A TRIANGULAR WING OF ASPECT RATIO 3 AND AN ALL-MOVABLE HORIZONTAL TAIL; $R=3.8 \times 10^6$ - Concluded

(k) Characteristics for wing-body-tail combination; $\delta_n = -24^\circ$

M	α	C_L	C_D	C_m	C_h	δ
0.60	-4.30	-0.336	0.0607	0.074	0.038	-23.9
	-2.16	-.206	.0449	.073	.038	-23.9
	-.56	-.119	.0393	.072	.038	-23.9
	.43	-.065	.0374	.070	.037	-23.9
	2.10	.025	.0377	.069	.036	-23.9
	4.26	.152	.0451	.067	.036	-23.9
	6.41	.278	.0627	.069	.037	-23.9
	8.56	.405	.0904	.077	.036	-23.9
	10.69	.507	.1224	.084	.035	-23.9
	12.79	.581	.1578	.101	.038	-23.9
	14.88	.657	.2018	.109	.040	-23.9
	16.97	.723	.2485	.114	.040	-23.9
	18.02	.758	.2758	.117	.038	-23.9
0.80	-4.36	-.363	.0656	.086	.046	-23.8
	-2.18	-.225	.0478	.083	.046	-23.8
	-.56	-.127	.0417	.080	.045	-23.8
	.44	-.068	.0393	.077	.044	-23.8
	2.14	.034	.0399	.073	.042	-23.8
	4.33	.176	.0492	.069	.040	-23.8
	6.51	.315	.0697	.067	.039	-23.8
	8.68	.442	.0998	.075	.038	-23.8
	10.83	.547	.1362	.076	.037	-23.8
	12.93	.628	.1770	.078	.037	-23.8
	15.05	.718	.2272	.074	.040	-23.8
	17.15	.788	.2795	.075	.043	-23.8

M	α	C_L	C_D	C_m	C_h	δ
0.90	-4.39	-0.393	0.0706	0.104	0.057	-23.8
	-2.19	-.240	.0507	.096	.055	-23.8
	-.56	-.134	.0438	.090	.054	-23.8
	.45	-.070	.0417	.087	.052	-23.8
	2.16	.040	.0422	.080	.048	-23.8
	4.38	.199	.0545	.073	.046	-23.8
	6.58	.354	.0790	.067	.048	-23.8
	8.76	.495	.1136	.061	.049	-23.8
1.30	-2.02	-.265	.0719	.154	.101	-23.7
	-.45	-.170	.0628	.138	.097	-23.7
	.51	-.112	.0597	.127	.094	-23.7
	2.14	-.013	.0585	.107	.089	-23.7
	4.26	.124	.0654	.078	.083	-23.7
	6.34	.250	.0802	.052	.073	-23.8
	8.38	.372	.1037	.029	.063	-23.8
	10.46	.483	.1352	.009	.056	-23.8
	12.54	.585	.1737	-.009	.050	-23.8
1.50	-2.01	-.234	.0653	.136	.083	-23.7
	-.45	-.149	.0570	.121	.079	-23.7
	.51	-.098	.0544	.111	.076	-23.7
	2.14	-.009	.0539	.094	.070	-23.7
	4.25	.109	.0637	.067	.064	-23.8
	6.33	.221	.0726	.045	.056	-23.8
	8.37	.324	.0925	.024	.046	-23.8

M	α	C_L	C_D	C_m	C_h	δ
1.50	10.44	0.428	0.1202	0.002	0.043	-23.8
	12.52	.527	.1544	-.019	.038	-23.8
1.70	-4.09	-.305	.0758	.136	.080	-23.7
	-2.01	-.209	.0615	.122	.075	-23.7
	-.45	-.134	.0540	.108	.072	-23.7
	.50	-.087	.0514	.099	.070	-23.7
	2.12	-.008	.0509	.083	.065	-23.8
	4.23	.093	.0562	.063	.062	-23.8
	6.30	.192	.0670	.042	.060	-23.8
	8.32	.286	.0840	.020	.047	-23.8
	10.39	.378	.1084	0	.034	-23.8
	12.46	.466	.1387	-.018	.023	-23.8
	14.52	.548	.1752	-.034	.016	-23.9
1.90	-4.08	-.277	.0716	.124	.071	-23.8
	-2.01	-.190	.0586	.110	.067	-23.8
	-.46	-.122	.0526	.098	.066	-23.8
	.49	-.081	.0501	.091	.069	-23.8
	2.11	-.006	.0477	.073	.068	-23.8
	4.20	.087	.0518	.053	.057	-23.8
	6.26	.172	.0626	.036	.047	-23.8
	8.28	.251	.0786	.020	.038	-23.8
	10.34	.331	.1009	.005	.026	-23.8
	12.40	.408	.1282	-.009	.017	-23.9
	14.46	.482	.1605	-.021	.009	-23.9
	16.52	.556	.1987	-.033	.004	-23.9

TABLE II.- AERODYNAMIC CHARACTERISTICS OF A MODEL EMPLOYING A TRIANGULAR WING OF ASPECT RATIO 3 WITH LEADING-EDGE CHORD EXTENSIONS AND AN ALL-MOVABLE HORIZONTAL TAIL

(a) Characteristics for wing-body combination with horizontal tail removed (vertical fins not removed)

M	α	C_L	C_D	C_m
0.60	-4.30	-0.270	0.0264	0
	-2.16	-.144	.0138	.002
	-1.07	-.079	.0103	.002
	-.54	-.046	.0095	.002
	.52	.017	.0091	.002
	1.04	.046	.0094	.002
	2.12	.107	.0111	.002
	4.25	.230	.0197	.002
	6.40	.359	.0411	.005
	8.54	.482	.0705	.009
	10.68	.608	.1098	.009
	12.81	.729	.1578	.008
	14.94	.834	.2128	.010
	16.97	.910	.2671	.024
	18.06	.917	.2897	.034
0.80	-4.37	-.297	.0293	.005
	-2.19	-.158	.0144	.005
	-1.10	-.083	.0104	.003
	-.54	-.048	.0092	.003
	.54	.020	.0086	.002
	1.06	.052	.0091	.001
	2.15	.120	.0110	0
	4.32	.258	.0222	.001
	6.50	.394	.0454	.001
	8.67	.535	.0801	.003
	10.84	.669	.1248	.011
	12.99	.793	.1778	.016
0.90	-4.41	-.321	.0321	.011
	-2.21	-.167	.0152	.007
	-1.11	-.090	.0105	.005
	-.55	-.050	.0094	.003

M	α	C_L	C_D	C_m
0.90	0.51	0.024	0.0088	0.002
	1.07	.061	.0092	0
	2.18	.135	.0118	-.002
	4.37	.288	.0253	-.007
	6.58	.448	.0526	-.013
	8.77	.602	.0934	-.025
	10.95	.768	.1470	-.050
1.20	-4.22	-.308	.0356	.046
	-2.11	-.158	.0200	.025
	-1.06	-.083	.0158	.014
	-.52	-.048	.0145	.009
	.50	.026	.0139	-.002
	2.10	.132	.0178	-.017
	4.20	.276	.0311	-.039
	1.04	.061	.0144	-.006
	6.30	.420	.0543	-.061
	8.41	.563	.0874	-.083
1.30	-4.21	-.276	.0356	.041
	-2.10	-.143	.0212	.022
	-1.05	-.076	.0172	.012
	-.52	-.043	.0160	.007
	.50	.023	.0155	-.002
	1.04	.055	.0160	-.007
	2.09	.119	.0192	-.016
	4.18	.246	.0316	-.035
	6.28	.372	.0583	-.054
	8.37	.492	.0813	-.072
	10.46	.603	.1181	-.089
1.50	-4.18	-.238	.0326	.036
	-2.09	-.126	.0201	.020
	-1.05	-.068	.0163	.011

M	α	C_L	C_D	C_m
1.50	-0.52	-0.039	0.0151	0.007
	.50	.019	.0146	-.002
	1.03	.048	.0152	-.006
	2.08	.105	.0181	-.014
	4.17	.213	.0298	-.030
	6.25	.320	.0475	-.046
	8.33	.422	.0725	-.061
	10.40	.518	.1040	-.077
1.70	-4.16	-.206	.0303	.030
	-2.08	-.109	.0194	.017
	-1.04	-.059	.0162	.010
	-.51	-.034	.0153	.006
	.49	.018	.0148	-.001
	1.03	.043	.0151	-.005
	2.07	.093	.0175	-.012
	4.15	.186	.0275	-.026
	6.22	.281	.0438	-.040
	8.29	.370	.0660	-.053
	10.36	.457	.0942	-.067
	12.43	.539	.1277	-.079
1.90	-4.14	-.180	.0286	.025
	-2.07	-.094	.0192	.013
	-1.03	-.050	.0166	.008
	-.50	-.028	.0160	.005
	.49	.016	.0156	-.001
	1.02	.038	.0159	-.004
	2.06	.081	.0180	-.011
	4.12	.164	.0265	-.022
	6.19	.248	.0407	-.034
	8.25	.327	.0607	-.046
	10.31	.404	.0853	-.057
	12.37	.479	.1155	-.068
	14.43	.551	.1507	---

TABLE II.- AERODYNAMIC CHARACTERISTICS OF A MODEL EMPLOYING A TRIANGULAR WING OF ASPECT RATIO 3 WITH LEADING-EDGE CHORD EXTENSIONS AND AN ALL-MOVABLE HORIZONTAL TAIL - Continued

(b) Characteristics for wing-body-tail combination; $\delta_n = +4^\circ$

M	α	C_L	C_D	C_m	C_h	δ
0.60	-4.32	-0.229	0.0253	-0.027	0.016	4.0
	-2.16	-.091	.0139	-.032	.017	4.0
	-1.06	-.019	.0114	-.036	.017	4.0
	-.49	.012	.0113	-.038	.018	4.0
	.55	.080	.0121	-.042	.018	4.0
	1.09	.115	.0133	-.045	.019	4.0
	2.17	.184	.0167	-.049	.018	4.0
	4.31	.313	.0288	-.055	.016	4.0
	6.46	.452	.0531	-.058	.012	4.0
	8.61	.581	.0881	-.059	.007	4.0
	10.77	.717	.1356	-.063	.003	4.0
	12.92	.849	.1909	-.070	-.001	4.0
	15.05	.963	.2531	-.073	-.004	4.0
	17.15	1.041	.3144	-.064	-.008	4.0
	18.19	1.065	.3446	-.059	-.014	4.0
0.80	-4.39	-.254	.0296	-.030	.022	4.1
	-2.20	-.099	.0157	-.038	.023	4.1
	-1.08	-.020	.0123	-.043	.023	4.1
	-.50	.015	.0122	-.046	.024	4.1
	.56	.091	.0131	-.051	.024	4.1
	1.10	.126	.0145	-.054	.024	4.1
	2.19	.203	.0186	-.059	.024	4.1
	4.37	.346	.0334	-.066	.022	4.1
	6.54	.486	.0597	-.067	.018	4.0
	8.73	.636	.0985	-.076	.009	4.0
	10.90	.778	.1504	-.089	-.001	4.0
	13.06	.914	.2123	-.101	-.010	4.0
0.90	-4.41	-.263	.0312	-.030	.023	4.1
	-2.22	-.107	.0168	-.039	.022	4.1
	-1.09	-.023	.0133	-.045	.021	4.1
	-.50	.016	.0129	-.048	.020	4.1
0.90	0.56	0.092	0.0139	-0.054	0.020	4.1
	1.10	.131	.0153	-.057	.019	4.0
	2.20	.208	.0195	-.062	.018	4.0
	4.39	.359	.0358	-.071	.016	4.0
	6.58	.505	.0633	-.074	.014	4.0
	8.78	.666	.1050	-.087	.012	4.0
	10.95	.815	.1589	-.111	.011	4.0
1.20	-4.24	-.283	.0374	.024	-.005	4.0
	-2.13	-.127	.0228	-.008	-.011	4.0
	-1.10	-.046	.0195	-.025	-.014	3.9
	-.56	-.007	.0184	-.033	-.016	3.9
	.55	.072	.0189	---	-.021	3.9
	1.02	.112	.0200	-.058	-.024	3.9
	2.07	.190	.0248	-.075	-.029	3.9
	4.17	.346	.0416	-.109	-.038	3.9
	6.27	.500	.0688	-.142	-.047	3.8
	7.33	.577	.0863	-.151	-.052	3.8
1.30	-4.22	-.262	.0374	.027	-.003	4.0
	-2.12	-.119	.0238	-.004	-.012	4.0
	-1.10	-.047	.0204	-.020	-.016	3.9
	-.56	-.011	.0195	-.028	-.018	3.9
	.49	.062	.0198	-.044	-.022	3.9
	1.02	.097	.0209	-.051	-.024	3.9
	2.06	.168	.0254	-.066	-.028	3.9
	4.16	.309	.0413	-.098	-.035	3.9
	6.24	.446	.0660	-.129	-.044	3.9
	7.29	.510	.0809	-.142	-.048	3.8
1.50	-4.18	-.226	.0333	.026	-.003	4.0
	-2.10	-.104	.0214	0	-.011	4.0
	-1.09	-.044	.0182	-.014	-.016	3.9
	-.55	-.011	.0173	-.022	-.017	3.9
	-.49	.053	.0175	-.036	-.021	3.9
1.50	1.02	0.084	0.0187	-0.043	-0.023	3.9
	2.06	.147	.0230	-.057	-.028	3.9
	4.14	.268	.0372	-.083	-.035	3.9
	6.21	.383	.0588	-.110	-.043	3.9
	8.29	.496	.0880	-.137	-.051	3.8
	9.32	.550	.1052	-.150	-.054	3.8
1.70	-4.16	-.196	.0312	.024	---	4.0
	-2.09	-.090	.0207	.001	-.008	4.0
	-1.07	-.037	.0180	-.011	-.012	4.0
	-.54	-.009	.0173	-.016	-.014	4.0
	.49	.047	.0175	-.029	-.019	3.9
	1.02	.075	.0184	-.035	-.021	3.9
	2.06	.129	.0219	-.046	-.025	3.9
	4.13	.234	.0343	-.069	-.033	3.9
	6.19	.334	.0531	-.092	-.042	3.9
	8.26	.432	.0785	-.114	-.049	3.8
	10.32	.527	.1105	-.136	-.057	3.8
	11.36	.573	.1290	-.146	-.061	3.8
1.90	-4.14	-.171	.0301	.017	0	4.0
	-2.08	-.080	.0213	-.001	-.006	4.0
	-1.06	-.032	.0195	-.011	-.010	4.0
	-.54	-.009	.0188	-.015	-.013	4.0
	.49	.040	.0189	-.025	-.017	4.0
	1.02	.064	.0196	-.030	-.019	3.9
	2.05	.110	.0224	-.039	-.024	3.9
	4.11	.201	.0329	-.057	-.032	3.9
	6.17	.290	.0494	-.076	-.041	3.9
	8.22	.376	.0718	-.095	-.050	3.8
	10.27	.458	.0996	-.113	-.058	3.8
	12.33	.540	.1333	-.131	-.066	3.8
	14.39	.619	.1729	-.146	-.072	3.8

(c) Characteristics for wing-body-tail combination; $\delta_n = 0^\circ$

M	α	C_L	C_D	C_m	C_h	δ
0.60	-4.30	-0.274	0.0280	0.007	0.003	0.2
	-2.15	-.140	.0149	.002	.003	0.2
	-1.06	-.069	.0115	-.002	.002	0.2
	-.55	-.036	.0108	-.005	.002	0.2
	.51	.030	.0104	-.009	.003	0.2
	1.06	.065	.0107	-.011	.003	0.2
	2.13	.133	.0132	-.015	.004	0.2
	4.26	.262	.0227	-.022	.005	0.2
	6.41	.400	.0456	-.026	.007	0.2
	8.57	.536	.0784	-.028	.009	0.2
	9.63	.599	.0976	-.030	.010	0.2
	10.71	.665	.1197	-.033	.011	0.2
	11.77	.731	.1445	-.036	.012	0.2
	12.85	.800	.1730	-.041	.013	0.2
	13.90	.855	.1955	-.044	.013	0.2
	14.97	.911	.2320	-.045	.013	0.2
	16.03	.959	.2626	-.042	.013	0.2
	17.08	.993	.2920	-.039	.012	0.2
	18.10	1.018	.3206	-.040	.009	0.2
0.80	-4.36	-.303	.0339	.011	.004	0.2
	-2.18	-.151	.0154	.003	.002	0.2
	-1.10	-.073	.0114	-.002	.003	0.2
	-.56	-.037	.0105	-.005	.003	0.2
	.52	.034	.0100	-.010	.004	0.2
	1.07	.071	.0106	-.013	.005	0.2
	2.16	.143	.0132	-.018	.006	0.2
	4.33	.285	.0256	-.026	.008	0.2
	6.50	.428	.0496	-.030	.010	0.2
	8.68	.588	.0890	-.042	.012	0.2
	9.76	.655	.1106	-.050	.013	0.2
	10.84	.722	.1344	-.055	.014	0.2
	11.92	.796	.1638	-.064	.016	0.2
	13.00	.866	.1948	-.073	.018	0.2
	14.06	.924	.2258	-.084	.020	0.3
	15.13	.960	.2591	-.094	.020	0.3
	8.19	.554	.0793	-.036	.012	0.2
0.90	-4.40	-0.327	0.0340	0.015	0.006	0.2
	-2.21	-.163	.0166	.006	.006	0.2
	-1.11	-.084	.0122	0	.005	0.2
	-.54	-.042	.0102	-.003	.008	0.2
	.52	.038	.0105	-.010	.009	0.2
	1.06	.078	.0112	-.013	.008	0.2
	2.18	.159	.0143	-.020	.008	0.2
	4.38	.321	.0295	-.032	.011	0.2
	6.58	.486	.0584	-.043	.011	0.2
	8.77	.659	.1030	-.066	.012	0.2
1.20	-4.22	-.319	.0363	.058	.007	0.2
	-2.11	-.161	.0219	.027	0	0.2
	-1.06	-.079	.0177	.010	0	0.2
	-.52	-.039	.0164	.002	-.001	0.2
	.50	.037	.0160	-.015	-.003	0.2
	1.04	.079	.0167	-.024	-.005	0.2
	2.09	.159	.0205	-.042	-.009	0.2
	4.19	.317	.0356	-.076	-.016	0.1
	6.29	.471	.0612	-.110	-.025	0.1
	8.39	.686	.0979	-.145	-.037	0.1
1.30	-4.19	-.290	.0378	.057	.013	0.2
	-2.09	-.146	.0227	.026	.004	0.2
	-1.05	-.070	.0185	.010	0	0.2
	-.52	-.035	.0170	.002	-.002	0.2
	.51	.035	.0171	-.013	-.006	0.2
	1.04	.072	.0177	-.021	-.008	0.2
	2.08	.145	.0214	-.037	-.012	0.2
	4.17	.284	.0354	-.068	-.020	0.1
	6.25	.420	.0582	-.099	-.028	0.1
	8.33	.553	.0906	-.129	-.037	0.1
	9.37	.615	.1096	-.143	-.041	0.1
1.50	-4.17	-.249	.0344	.050	.013	0.3
	-2.09	-.126	.0209	.023	.004	0.2
	-1.05	-.061	.0170	.009	0	0.2
1.50	-0.51	-0.030	0.0159	0.003	0.001	0.2
	.50	.031	.0158	-.011	-.005	0.2
	1.03	.064	.0165	-.018	-.007	0.2
	2.07	.127	.0200	-.032	-.012	0.2
	4.16	.246	.0327	-.058	-.020	0.1
	6.23	.363	.0529	-.085	-.028	0.1
	8.31	.477	.0810	-.111	-.037	0.1
	10.37	.583	.1157	-.136	-.045	0
1.70	-4.16	-.214	.0318	.041	.013	0.2
	-2.08	-.106	.0203	.018	.005	0.2
	-1.04	-.051	.0171	.006	.001	0.2
	-.51	-.025	.0163	.001	-.001	0.2
	.50	.030	.0162	-.011	-.003	0.2
	1.03	.058	.0169	-.017	-.005	0.2
	2.07	.112	.0199	-.029	-.010	0.2
	4.14	.217	.0313	-.051	-.019	0.1
	6.21	.318	.0491	-.073	-.027	0.1
	8.28	.415	.0736	-.095	-.035	0.1
	10.35	.511	.1044	-.116	-.044	0
	11.38	.562	.1226	-.127	-.048	0
1.90	-4.13	-.186	.0303	.031	.014	0.3
	-2.07	-.092	.0204	.013	.006	0.2
	-1.03	-.045	.0180	.004	.002	0.2
	-.50	-.023	.0173	0	0	0.2
	.48	.024	.0173	-.010	-.002	0.2
	1.01	.048	.0178	-.014	-.005	0.2
	2.05	.095	.0201	-.023	-.009	0.2
	4.12	.184	.0295	-.042	-.018	0.1
	6.17	.272	.0448	-.060	-.027	0.1
	8.22	.358	.0661	-.078	-.035	0.1
	10.28	.440	.0928	-.096	-.043	0.1
	12.34	.522	.1255	-.112	-.051	0
	14.40	.598	.1632	-.128	-.058	0

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TABLE II.- AERODYNAMIC CHARACTERISTICS OF A MODEL EMPLOYING A TRIANGULAR WING OF ASPECT RATIO 3 WITH LEADING-EDGE CHORD EXTENSIONS AND AN ALL-MOVABLE HORIZONTAL TAIL - Continued

(d) Characteristics for wing-body-tail combination; $\delta_n = -2^\circ$

M	α	C_L	C_D	C_m	C_h	δ
0.60	-4.32	-0.300	0.0297	0.021	-0.001	-1.6
	-2.17	-.166	.0156	.016	0	-1.6
	-1.09	-.093	.0115	.013	.001	-1.6
	-.54	-.060	.0105	.011	.001	-1.6
	.52	.010	.0098	.007	-.001	-1.6
	1.06	.042	.0103	.006	-.001	-1.6
	2.12	.109	.0122	.002	-.001	-1.6
	4.26	.240	.0212	-.006	0	-1.6
	6.42	.380	.0430	-.009	0	-1.6
	8.56	.512	.0752	-.010	.001	-1.6
	9.64	.578	.0946	-.013	.002	-1.6
	10.71	.641	.1159	-.015	.003	-1.6
	11.78	.705	.1398	-.018	.004	-1.6
	12.85	.776	.1681	-.023	.005	-1.6
	13.92	.835	.1967	-.026	.006	-1.6
	14.98	.887	.2258	-.026	.007	-1.6
	16.04	.935	.2566	-.023	.008	-1.6
	17.09	.971	.2855	-.019	.009	-1.6
	18.12	.999	.3144	-.020	.010	-1.6
0.80	-4.38	-.329	.0325	.028	0	-1.6
	-2.20	-.177	.0162	.021	.001	-1.6
	-1.11	-.098	.0116	.015	-.001	-1.6
	-.55	-.061	.0104	.013	-.001	-1.5
	.53	.015	.0098	.007	0	-1.6
	1.09	.051	.0102	.005	0	-1.6
	2.15	.124	.0125	0	0	-1.6
	4.33	.269	.0244	-.010	0	-1.6
	6.51	.413	.0477	-.012	.001	-1.6
	8.68	.562	.0853	-.023	.003	-1.6
	9.76	.630	.1071	-.029	.004	-1.6
	10.85	.704	.1450	-.036	.006	-1.6
	11.94	.776	.1604	-.043	.009	-1.6
	13.01	.841	.1894	-.051	.012	-1.6
0.90	3.52	-.354	-.0133	.035	.003	-1.6
	-2.22	-.188	.0171	.023	.001	-1.6
0.90	-1.11	-0.101	0.0119	0.016	0	-1.6
	-.56	-.062	.0108	.012	-.001	-1.6
	.54	.022	.0101	.006	-.001	-1.6
	1.07	.056	.0105	.003	0	-1.6
	2.18	.136	.0133	-.002	.002	-1.6
	4.37	.294	.0273	-.012	.005	-1.6
	6.57	.456	.0547	-.022	.005	-1.6
	9.03	.626	.1001	-.047	.006	-1.6
	9.86	.698	.1217	-.052	.008	-1.6
	10.96	.791	.1532	-.073	.014	-1.6
1.20	-4.21	-.339	.0403	.073	.018	-1.5
	-2.11	-.177	.0205	.041	.009	-1.6
	-1.05	-.095	.0156	.023	.005	-1.6
	-.53	-.056	.0141	.015	.004	-1.6
	.50	.025	.0163	-.002	0	-1.6
	1.04	.062	.0142	-.009	0	-1.6
	2.09	.139	.0190	-.026	-.002	-1.6
	4.19	.298	.0349	-.061	-.007	-1.6
	6.28	.453	.0600	-.096	-.013	-1.6
	8.38	.611	.0933	-.131	-.023	-1.7
	8.99	.661	.1065	-.143	-.027	-1.7
1.30	-4.19	-.310	.0401	.069	.019	-1.5
	-2.10	-.163	.0240	.038	.012	-1.6
	-1.05	-.088	.0194	.021	.008	-1.6
	-.52	-.052	.0181	.014	.006	-1.6
	.50	.022	.0171	-.002	.001	-1.6
	1.04	.055	.0176	-.009	0	-1.6
	2.08	.127	.0212	-.024	-.002	-1.6
	4.17	.267	.0349	-.055	-.011	-1.6
	6.26	.403	.0573	-.087	-.019	-1.7
	8.34	.537	.0892	-.118	-.028	-1.7
	10.02	.639	.1209	-.140	-.034	-1.7
1.50	-4.17	-.265	.0360	.060	.019	-1.5
	-2.09	-.140	.0218	.033	.011	-1.6
1.50	-1.05	-0.075	0.0176	0.018	0.007	-1.6
	-.52	-.044	.0162	.011	.005	-1.6
	.50	.020	.0157	-.003	.001	-1.6
	1.03	.052	.0163	-.009	.001	-1.6
	2.08	.114	.0195	-.023	-.003	-1.6
	4.15	.233	.0320	-.049	-.012	-1.6
	6.23	.349	.0517	-.075	-.021	-1.7
	8.30	.461	.0788	-.102	-.029	-1.7
	10.37	.568	.1133	-.127	-.037	-1.7
	11.56	.629	.1365	-.141	-.042	-1.7
1.70	-4.15	-.224	.0326	.049	.021	-1.5
	-2.08	-.117	.0206	.026	.012	-1.6
	-1.04	-.062	.0174	.014	.008	-1.6
	-.51	-.034	.0164	.009	.007	-1.6
	.49	.019	.0159	-.003	.002	-1.6
	1.03	.047	.0165	-.009	0	-1.6
	2.07	.100	.0192	-.020	-.002	-1.6
	4.14	.201	.0299	-.041	-.011	-1.6
	6.21	.303	.0472	-.063	-.021	-1.7
	8.28	.401	.0710	-.085	-.029	-1.7
	10.34	.492	.1009	-.105	-.037	-1.7
	12.41	.582	.1373	-.125	-.048	-1.7
1.90	-4.13	-.193	.0309	.036	.021	-1.5
	-2.07	-.100	.0209	.019	.012	-1.6
	-1.03	-.052	.0182	.010	.008	-1.6
	-.50	-.029	.0174	.005	.006	-1.6
	.49	.017	.0170	-.004	.002	-1.6
	1.02	.041	.0174	-.008	0	-1.6
	2.06	.087	.0195	-.017	-.003	-1.6
	4.12	.176	.0287	-.034	-.013	-1.6
	6.18	.263	.0435	-.052	-.022	-1.7
	8.23	.349	.0647	-.069	-.031	-1.7
	10.29	.430	.0909	-.086	-.039	-1.7
	12.35	.510	.1227	-.103	-.046	-1.8
	14.40	.587	.1602	-.118	-.052	-1.8

(e) Characteristics for wing-body-tail combination; $\delta_n = -4^\circ$

M	α	C_L	C_D	C_m	C_h	δ
0.60	-4.32	-0.323	0.0324	0.043	-0.010	-3.8
	-2.17	-.187	.0172	.037	-.009	-3.8
	-1.10	-.118	.0127	.034	-.008	-3.8
	-.55	-.081	.0116	.032	-.008	-3.8
	.47	-.015	.0104	.028	-.007	-3.8
	1.04	.017	.0106	.026	-.006	-3.8
	2.13	.086	.0121	.022	-.004	-3.8
	4.25	.215	.0202	.014	-.002	-3.8
	6.38	.350	.0398	.011	.001	-3.8
	8.56	.483	.0716	.010	.001	-3.8
	10.68	.614	.1113	.005	-.002	-3.8
	12.82	.749	.1627	-.003	0	-3.8
	14.94	.856	.2181	-.006	.003	-3.8
	17.04	.937	.2752	.001	.004	-3.8
	18.07	.963	.3022	.002	.005	-3.8
0.80	-4.39	-.356	.0356	.054	-.014	-3.8
	-2.21	-.205	.0183	.046	-.013	-3.8
	-1.12	-.129	.0129	.041	-.011	-3.8
	-.77	-.090	.0117	.038	-.011	-3.8
	.48	-.016	.0105	.033	-.009	-3.8
	2.18	.097	.0186	.024	-.005	-3.8
	1.07	.021	.0108	.030	-.007	-3.8
	4.32	.240	.0232	.014	-.002	-3.8
	6.49	.381	.0451	.010	0	-3.8
	8.68	.536	.0821	0	.001	-3.8
	10.83	.672	.1272	-.013	-.001	-3.8
	13.00	.810	.1832	-.029	.001	-3.8
0.90	-4.43	-.387	.0405	.067	.007	-3.8
0.90	-2.23	-0.220	0.0204	0.054	0	-3.8
	-1.12	-.134	.0142	.046	-.001	-3.8
	-.57	-.093	.0126	.043	-.001	-3.8
	.49	-.013	.0114	.037	-.001	-3.8
	1.08	.028	.0114	.031	-.004	-3.8
	2.20	.111	.0138	.024	-.004	-3.8
	4.37	.269	.0267	.011	-.003	-3.8
	6.57	.433	.0532	-.001	-.001	-3.8
	8.77	.600	.0947	-.021	0	-3.8
	10.95	.758	.1484	-.047	.007	-3.8
1.20	-4.20	-.358	.0416	.094	.034	-3.7
	-2.09	-.197	.0244	.062	.024	-3.7
	-1.04	-.111	.0191	.044	.020	-3.7
	-.52	-.072	.0177	.036	.018	-3.7
	.54	.008	.0168	.019	.014	-3.8
	1.08	.049	.0174	.011	.011	-3.8
	2.11	.122	.0204	-.006	.006	-3.8
	4.20	.277	.0340	-.040	-.001	-3.8
	6.30	.432	.0577	-.074	-.001	-3.8
	8.40	.589	.0931	-.110	-.005	-3.8
	8.98	.635	.1050	-.120	-.012	-3.8
1.30	-4.18	-.319	.0416	.088	.027	-3.7
	-2.09	-.178	.0255	.057	.023	-3.7
	-1.03	-.099	.0206	.039	.018	-3.7
	-.52	-.063	.0191	.031	.016	-3.8
	.54	.011	.0181	.015	.012	-3.8
	1.07	.047	.0185	.008	.010	-3.8
	2.09	.114	.0216	-.007	.007	-3.8
1.30	4.17	0.251	0.0341	-0.038	0	-3.8
	6.26	.387	.0555	-.068	-.006	-3.8
	8.34	.517	.0859	-.098	-.014	-3.9
	10.19	.627	.1204	-.123	-.022	-3.9
1.50	-4.16	-.274	.0373	.074	.030	-3.7
	-2.08	-.148	.0227	.046	.023	-3.7
	-1.05	-.083	.0183	.031	.018	-3.7
	-.51	-.051	.0169	.024	.016	-3.7
	.53	.013	.0163	.010	.012	-3.8
	1.04	.044	.0168	.005	.010	-3.8
	2.09	.103	.0198	-.010	.006	-3.8
	4.17	.220	.0313	-.035	0	-3.8
	6.25	.335	.0504	-.061	-.008	-3.8
	8.32	.448	.0770	-.087	-.016	-3.9
	10.39	.553	.1105	-.111	-.025	-3.9
	11.14	.591	.1245	-.120	-.028	-3.9
1.70	-4.14	-.234	.0344	.060	.031	-3.7
	-2.07	-.127	.0220	.037	.022	-3.7
	-1.03	-.069	.0182	.024	.017	-3.7
	-.50	-.042	.0171	.019	.015	-3.7
	.53	.015	.0164	.006	.011	-3.8
	1.03	.040	.0169	.001	.009	-3.8
	2.08	.093	.0194	-.010	.005	-3.8
	4.15	.194	.0297	-.031	-.001	-3.8
	6.22	.294	.0464	-.053	-.010	-3.8
	8.28	.392	.0696	-.074	-.018	-3.9
	10.35	.482	.0989	-.094	-.026	-3.9
	12.42	.580	.1365	-.114	-.035	-3.9

NACA

TABLE II.- AERODYNAMIC CHARACTERISTICS OF A MODEL EMPLOYING A TRIANGULAR WING OF ASPECT RATIO 3 WITH LEADING-EDGE CHORD EXTENSIONS AND AN ALL-MOVABLE HORIZONTAL TAIL - Continued

(f) Characteristics for wing-body-tail combination; $\delta_n = -8^\circ$

M	α	C_L	C_D	C_m	C_h	δ
0.60	-4.34	-0.363	0.0410	0.070	0.009	-7.6
	-2.22	-.231	.0240	.069	.004	-7.7
	-1.12	-.163	.0185	.067	0	-7.8
	-.59	-.132	.0169	.066	0	-7.8
	.49	-.066	.0143	.064	-.004	-7.9
	1.03	-.034	.0136	.062	-.005	-7.9
	2.09	.033	.0139	.058	-.009	-8.0
	4.25	.167	.0200	.051	-.010	-8.0
	6.40	.303	.0374	.046	-.009	-8.0
	8.53	.434	.0650	.044	-.007	-7.9
	10.65	.570	.1059	.038	-.006	-7.9
	12.79	.702	.1544	.030	-.004	-7.9
	14.90	.807	.2075	.026	-.002	-7.8
	17.00	.889	.2628	.034	-.001	-7.8
	18.05	.921	.2915	.035	0	-7.8
0.80	-4.40	-.397	.0453	.086	-.013	-7.8
	-2.23	-.253	.0262	.082	-.016	-7.8
	-1.14	-.177	.0197	.079	-.017	-7.8
	-.59	-.141	.0176	.076	-.017	-7.8
	.44	-.070	.0152	.072	-.018	-7.8
	.99	-.035	.0146	.070	-.018	-7.8
	2.13	.040	.0151	.065	-.018	-7.8
	4.32	.187	.0234	.056	-.016	-7.8
	6.50	.329	.0430	.051	-.016	-7.8
	8.64	.477	.0745	.040	-.014	-7.8
	10.81	.623	.1191	.026	-.011	-7.8
	12.96	.756	.1735	.008	-.005	-7.8
0.90	-4.45	-.431	.0506	.098	.015	-7.8
	-2.24	-.267	.0287	.091	.011	-7.8
	-1.14	-.187	.0219	.088	.014	-7.8
	-.59	-.146	.0196	.086	.013	-7.8
	.45	-.071	.0169	.081	.010	-7.8
0.90	1.01	-0.032	0.0164	0.079	0.012	-7.8
	2.18	.053	.0176	.073	.010	-7.8
	4.39	.219	.0283	.061	.005	-7.8
	6.59	.386	.0532	.049	.001	-7.8
	8.76	.551	.0919	.029	.004	-7.8
	10.94	.710	.1435	.002	.012	-7.8
1.20	-4.18	-.365	.0483	.125	.056	-7.6
	-2.08	-.229	.0295	.094	.047	-7.6
	-1.03	-.148	.0237	.076	.043	-7.7
	-.50	-.106	.0219	.068	.041	-7.7
	.51	-.030	.0203	.053	.037	-7.7
	1.08	.010	.0203	.045	.035	-7.7
	2.15	.089	.0226	.028	.029	-7.7
	4.22	.242	.0346	-.007	.018	-7.7
	6.31	.398	.0567	-.038	.010	-7.8
	8.41	.551	.0898	-.074	0	-7.8
	9.73	.654	.1175	-.095	-.002	-7.8
1.30	-4.16	-.347	.0473	.112	.045	-7.7
	-2.07	-.205	.0300	.083	.037	-7.7
	-1.02	-.131	.0247	.067	.034	-7.7
	-.51	-.098	.0227	.059	.033	-7.7
	.56	-.022	.0212	.044	.030	-7.7
	1.08	.014	.0211	.037	.029	-7.7
	2.14	.085	.0237	.022	.025	-7.7
	4.19	.222	.0345	-.009	.018	-7.7
	6.27	.355	.0541	-.039	.010	-7.8
	8.42	.488	.0832	-.069	.002	-7.8
	10.52	.609	.1205	-.095	.004	-7.8
1.50	-4.14	-.301	.0428	.100	.043	-7.7
	-2.06	-.176	.0268	.071	.038	-7.7
	-1.02	-.109	.0214	.055	.034	-7.7
	-.50	-.077	.0197	.048	.033	-7.7
	.50	-.012	.0183	.033	.030	-7.7
1.50	1.07	0.021	0.0184	0.026	0.028	-7.7
	2.13	.082	.0209	.013	.023	-7.7
	4.17	.198	.0311	-.014	.014	-7.8
	6.25	.313	.0488	-.039	.005	-7.8
	8.32	.423	.0739	-.063	0	-7.8
	10.39	.528	.1063	-.087	-.008	-7.8
	12.25	.619	.1414	-.108	-.016	-7.9
1.70	-4.13	-.253	.0384	.079	.047	-7.6
	-2.06	-.143	.0249	.055	.038	-7.7
	-1.02	-.088	.0208	.043	.033	-7.7
	-.50	-.060	.0194	.037	.031	-7.7
	.50	-.004	.0182	.025	.027	-7.7
	1.06	.023	.0184	.019	.024	-7.7
	2.12	.077	.0205	.008	.020	-7.7
	4.15	.175	.0298	-.013	.011	-7.8
	6.22	.275	.0455	-.034	.002	-7.8
	8.29	.370	.0676	-.054	-.004	-7.8
	10.35	.462	.0961	-.074	-.012	-7.8
	12.42	.551	.1309	-.093	-.021	-7.9
	13.90	.597	.1512	-.102	-.025	-7.9
1.90	-4.11	-.217	.0359	.060	.043	-7.7
	-2.06	-.121	.0245	.042	.034	-7.7
	-1.01	-.073	.0211	.033	.029	-7.7
	-.49	-.050	.0200	.028	.026	-7.7
	.50	-.002	.0192	.020	.022	-7.7
	1.05	.020	.0194	.015	.019	-7.7
	2.10	.067	.0212	.006	.015	-7.8
	4.13	.151	.0290	-.011	.007	-7.8
	6.18	.238	.0429	-.027	-.002	-7.8
	8.24	.321	.0625	-.043	-.012	-7.8
	10.29	.402	.0873	-.059	-.019	-7.9
	12.35	.480	.1175	-.071	-.026	-7.9
	14.40	.559	.1535	-.084	-.032	-7.9

(g) Characteristics for wing-body-tail combination; $\delta_n = -12^\circ$

M	α	C_L	C_D	C_m	C_h	δ
0.60	-4.33	-0.362	0.0477	0.075	0.030	-11.7
	-2.19	-.233	.0311	.076	.027	-11.8
	-1.11	-.168	.0263	.076	.027	-11.8
	-.59	-.138	.0244	.076	.027	-11.8
	.47	-.077	.0219	.076	.025	-11.8
	1.03	-.049	.0215	.077	.024	-11.8
	2.08	.015	.0210	.076	.021	-11.8
	4.25	.139	.0253	.074	.014	-11.8
	6.39	.273	.0404	.073	.007	-11.8
	8.53	.399	.0664	.075	.002	-11.8
	10.67	.530	.1024	.072	0	-11.8
	12.87	.658	.1486	.066	-.006	-11.8
	14.89	.763	.2017	.061	-.008	-11.8
	17.00	.843	.2544	.069	-.009	-11.8
	18.02	.866	.2781	.071	-.009	-11.8
0.80	-4.39	-.369	.0484	.070	.029	-11.7
	-2.21	-.231	.0307	.071	.029	-11.7
	-1.12	-.160	.0252	.071	.028	-11.7
	-.58	-.126	.0234	.071	.028	-11.7
	.45	-.063	.0215	.072	.026	-11.7
	1.00	-.030	.0208	.071	.025	-11.7
	2.14	.039	.0213	.071	.023	-11.7
	4.33	.176	.0289	.069	.019	-11.8
	6.50	.311	.0477	.071	.012	-11.8
	8.67	.453	.0783	.066	.003	-11.8
	10.83	.583	.1191	.057	-.005	-11.8
	12.95	.706	.1672	.047	-.018	-11.8
	15.08	.823	.2253	.028	-.015	-11.8
0.90	-4.41	-.406	.0531	.088	.035	-11.7
	-2.23	-.247	.0322	.080	.032	-11.7
	-1.13	-.167	.0259	.077	.031	-11.7
	-.58	-.130	.0236	.076	.030	-11.7
	.53	-.072	.0228	.087	.030	-11.7
0.90	1.07	-0.035	0.0225	0.087	0.028	-11.7
	2.14	.026	.0237	.094	.016	-11.8
	4.36	.187	.0333	.087	.015	-11.8
	6.56	.350	.0564	.077	.011	-11.8
	8.75	.508	.0926	.062	.007	-11.8
	10.89	.659	.1424	.041	.025	-11.7
1.20	-4.17	-.406	.0586	.150	.079	-11.5
	-2.06	-.253	.0391	.122	.072	-11.6
	-1.01	-.175	.0329	.106	.068	-11.6
	-.48	-.136	.0308	.098	.066	-11.6
	.51	-.060	.0286	.083	.062	-11.6
	1.05	-.020	.0283	.075	.059	-11.6
	2.17	.061	.0299	.058	.052	-11.6
	4.27	.215	.0404	.024	.044	-11.7
	6.34	.364	.0607	-.007	.035	-11.7
	8.44	.516	.0921	-.039	.024	-11.7
	9.49	.601	.1131	-.057	.020	-11.7
1.30	-4.15	-.366	.0562	.135	.065	-11.6
	-2.06	-.227	.0385	.106	.056	-11.6
	-1.01	-.152	.0328	.091	.053	-11.6
	-.48	-.118	.0309	.084	.051	-11.6
	.57	-.048	.0288	.070	.047	-11.6
	1.11	-.012	.0286	.063	.045	-11.7
	2.18	.060	.0304	.048	.040	-11.7
	4.24	.193	.0398	.018	.034	-11.7
	6.29	.328	.0578	-.010	.029	-11.7
	8.38	.456	.0850	-.039	.023	-11.7
	10.49	.576	.1213	-.066	.014	-11.8
1.50	-4.14	-.317	.0518	.118	.053	-11.6
	-2.05	-.197	.0355	.094	.049	-11.6
	-1.01	-.132	.0300	.080	.048	-11.6
	-.49	-.101	.0281	.073	.047	-11.6
1.50	0.51	-0.037	-0.0260	0.058	0.043	-11.6
	1.07	-.005	.0258	.051	.042	-11.7
	2.14	.058	.0274	.037	.039	-11.7
	4.19	.173	.0356	.010	.033	-11.7
	6.27	.288	.0518	-.017	.023	-11.7
	8.34	.399	.0755	-.041	.014	-11.8
	10.41	.503	.1064	-.065	.006	-11.8
1.70	-4.12	-.275	.0475	.101	.060	-11.6
	-2.05	-.165	.0325	.076	.055	-11.6
	-1.01	-.108	.0277	.063	.050	-11.6
	-.49	-.081	.0261	.057	.048	-11.6
	.50	-.026	.0244	.045	.043	-11.6
	1.06	.001	.0243	.038	.040	-11.7
	2.13	.057	.0257	.027	.035	-11.7
	4.17	.156	.0337	.005	.025	-11.7
	6.24	.256	.0486	-.016	.016	-11.7
	8.31	.351	.0698	-.035	.007	-11.8
	10.37	.441	.0969	-.054	.001	-11.8
	12.44	.531	.1306	-.073	-.007	-11.8
1.90	-4.10	-.234	.0426	.078	.057	-11.6
	-2.04	-.139	.0323	.058	.047	-11.7
	-1.01	-.090	.0263	.048	.042	-11.7
	-.50	-.067	.0249	.044	.039	-11.7
	.49	-.020	.0235	.035	.034	-11.7
	1.04	.002	.0236	.031	.032	-11.7
	2.09	.050	.0249	.022	.027	-11.7
	4.13	.136	.0322	.005	.018	-11.7
	6.19	.222	.0453	-.011	.009	-11.8
	8.24	.306	.0643	-.027	-.001	-11.8
	10.29	.384	.0879	-.042	-.005	-11.8
	12.35	.462	.1174	-.055	-.014	-11.9
	14.40	.541	.1518	-.070	-.021	-11.9
	16.46	.614	.1983	-.083	-.027	-11.9

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TABLE II.- AERODYNAMIC CHARACTERISTICS OF A MODEL EMPLOYING A TRIANGULAR WING OF ASPECT RATIO 3 WITH LEADING-EDGE CHORD EXTENSIONS AND AN ALL-MOVABLE HORIZONTAL TAIL - Continued

(h) Characteristics for wing-body-tail combination; $\delta_n = -16^\circ$

M	α	C_L	C_D	C_m	C_h	δ
0.60	-4.32	-0.343	0.0505	0.065	0.030	-15.6
	-2.18	-.212	.0344	.065	.030	-15.6
	-1.10	-.147	.0297	.065	.030	-15.6
	-.57	-.117	.0283	.065	.030	-15.6
	.44	-.058	.0266	.066	.030	-15.6
	.98	-.029	.0259	.066	.030	-15.6
	2.10	.031	.0262	.067	.031	-15.6
	4.25	.146	.0321	.073	.032	-15.6
	6.40	.257	.0483	.080	.028	-15.7
	8.52	.388	.0724	.084	.024	-15.7
	10.66	.515	.1079	.085	.019	-15.7
	12.80	.635	.1525	.083	.013	-15.7
	14.93	.736	.2022	.084	.008	-15.7
	17.02	.806	.2517	.098	.005	-15.7
	18.04	.824	.2730	.104	0	-15.7
0.80	-4.39	-.365	.0529	.071	.031	-15.6
	-2.21	-.226	.0354	.070	.030	-15.6
	-1.12	-.152	.0299	.069	.030	-15.6
	-.57	-.119	.0282	.068	.030	-15.6
	.46	-.052	.0263	.067	.029	-15.6
	1.01	-.019	.0261	.067	.029	-15.6
	2.15	.050	.0267	.066	.029	-15.6
	4.34	.185	.0350	.065	.030	-15.6
	6.51	.318	.0542	.069	.030	-15.6
	8.69	.455	.0852	.067	.027	-15.6
	10.85	.580	.1254	.064	.024	-15.6
	12.96	.697	.1732	.057	.016	-15.7
	15.08	.793	.2264	.051	-.002	-15.7
0.90	-4.43	-.397	.0610	.084	.037	-15.6
	-2.23	-.246	.0388	.082	.039	-15.6
	-1.12	-.163	.0315	.078	.037	-15.6
	-.58	-.126	.0299	.076	.037	-15.6
	.47	-.053	.0276	.074	.036	-15.6
	1.03	-.016	.0275	.072	.035	-15.6

M	α	C_L	C_D	C_m	C_h	δ
0.90	2.19	0.060	0.0285	0.071	0.035	-15.6
	4.39	.214	.0359	.066	.034	-15.6
	6.59	.372	.0634	.060	.033	-15.6
	8.79	.525	.1004	.050	.032	-15.6
	10.92	.641	.1490	.055	.022	-15.6
1.20	-4.15	-.421	.0694	.165	.098	-15.4
	-2.05	-.273	.0489	.139	.092	-15.4
	-1.00	-.195	.0423	.126	.089	-15.4
	-.48	-.158	.0398	.119	.088	-15.4
	.51	-.085	.0371	.105	.085	-15.4
	1.05	-.048	.0367	.099	.083	-15.4
	2.16	.033	.0376	.082	.081	-15.4
	4.28	.186	.0468	.050	.072	-15.5
	6.34	.337	.0658	.019	.059	-15.5
	8.44	.491	.0959	-.013	.047	-15.5
	10.56	.638	.1378	-.030	.043	-15.6
1.30	-4.14	-.387	.0689	.153	.087	-15.4
	-2.05	-.249	.0497	.127	.080	-15.4
	-1.00	-.177	.0433	.112	.077	-15.5
	-.47	-.142	.0410	.106	.075	-15.5
	.51	-.073	.0382	.091	.071	-15.5
	1.03	-.037	.0375	.084	.069	-15.5
	2.15	.035	.0386	.069	.063	-15.5
	4.24	.171	.0471	.040	.055	-15.5
	6.29	.302	.0639	.013	.043	-15.6
	8.38	.429	.0900	-.014	.036	-15.6
	10.45	.548	.1247	-.037	.034	-15.6
	12.10	.633	.1567	-.054	.029	-15.6
1.50	-4.12	-.334	.0610	.134	.069	-15.5
	-2.04	-.217	.0431	.111	.063	-15.5
	-1.00	-.154	.0377	.098	.061	-15.5
	-.48	-.122	.0375	.091	.060	-15.5
	.50	-.061	.0330	.078	.057	-15.5

M	α	C_L	C_D	C_m	C_h	δ
1.50	1.03	-0.031	0.0326	0.072	0.056	-15.5
	2.14	.033	.0340	.059	.054	-15.5
	4.23	.152	.0418	.033	.050	-15.5
	6.27	.267	.0564	.006	.040	-15.6
	8.34	.377	.0788	-.019	.030	-15.6
	10.41	.481	.1081	-.042	.021	-15.6
	12.48	.582	.1449	-.064	.014	-15.7
1.70	-4.11	-.292	.0565	.117	.064	-15.5
	-2.04	-.186	.0409	.096	.065	-15.5
	-1.00	-.129	.0351	.082	.065	-15.5
	-.48	-.102	.0331	.076	.064	-15.5
	.50	-.046	.0324	.063	.061	-15.5
	1.03	-.019	.0305	.057	.059	-15.5
	2.13	.037	.0313	.045	.054	-15.5
	4.21	.139	.0383	.024	.042	-15.6
	6.25	.236	.0518	.008	.031	-15.6
	8.31	.331	.0718	-.017	.021	-15.6
	10.38	.421	.0980	-.035	.012	-15.7
	12.44	.508	.1300	-.053	.004	-15.7
	14.51	.592	.1680	-.070	-.002	-15.7
1.90	-4.09	-.250	.0509	.093	.074	-15.5
	-2.04	-.156	.0376	.074	.065	-15.5
	-1.01	-.108	.0332	.064	.059	-15.5
	-.50	-.085	.0317	.060	.056	-15.5
	.49	-.038	.0299	.051	.050	-15.5
	1.02	-.015	.0298	.046	.047	-15.5
	2.11	.036	.0307	.038	.042	-15.6
	4.17	.123	.0375	.021	.030	-15.6
	6.20	.207	.0497	.004	.020	-15.6
	8.25	.290	.0678	-.011	.011	-15.7
	10.31	.370	.0912	-.025	.003	-15.7
	12.36	.447	.1203	-.039	-.001	-15.7
	14.42	.521	.1539	-.052	-.007	-15.7
	16.47	.595	.1929	-.065	-.012	-15.7

(i) Characteristics for wing-body-tail combination; $\delta_n = -20^\circ$

M	α	C_L	C_D	C_m	C_h	δ
0.60	-4.32	-0.342	0.0554	0.067	0.029	-19.7
	-2.18	-.216	.0405	.068	.029	-19.7
	-1.11	-.150	.0356	.068	.028	-19.7
	-.57	-.120	.0341	.068	.028	-19.7
	.45	-.060	.0322	.068	.027	-19.7
	.99	-.032	.0320	.069	.027	-19.7
	2.10	.028	.0327	.068	.027	-19.7
	4.26	.149	.0371	.069	.028	-19.7
	6.40	.274	.0535	.072	.030	-19.7
	8.55	.399	.0799	.078	.031	-19.7
	10.68	.525	.1145	.083	.030	-19.7
	12.82	.633	.1596	.085	.030	-19.7
	14.92	.710	.2047	.091	.027	-19.7
	17.03	.789	.2573	.110	.024	-19.8
	18.06	.802	.2777	.119	.020	-19.8
0.80	-4.38	-.371	.0594	.076	.036	-19.7
	-2.21	-.232	.0422	.075	.035	-19.7
	-1.12	-.157	.0361	.073	.034	-19.7
	-.57	-.122	.0344	.072	.034	-19.7
	.46	-.057	.0326	.071	.032	-19.7
	1.01	-.024	.0320	.070	.031	-19.7
	2.15	.044	.0327	.069	.030	-19.7
	4.33	.183	.0409	.067	.030	-19.7
	6.50	.317	.0599	.068	.030	-19.7
	8.67	.455	.0908	.065	.030	-19.7
	10.83	.579	.1308	.060	.030	-19.7
	12.94	.696	.1796	.055	.030	-19.7
	15.06	.785	.2310	.054	.027	-19.7
0.90	-4.42	-.403	.0653	.091	.045	-19.7
	-2.22	-.247	.0446	.086	.043	-19.7
	-1.12	-.168	.0382	.084	.044	-19.7
	-.58	-.132	.0362	.082	.044	-19.7
	.47	-.059	.0343	.081	.044	-19.7

M	α	C_L	C_D	C_m	C_h	δ
0.90	1.03	-0.021	0.0339	0.079	0.044	-19.7
	2.18	.054	.0349	.075	.040	-19.7
	4.39	.207	.0452	.070	.038	-19.7
	6.59	.370	.0702	.064	.038	-19.7
	8.79	.534	.1101	.048	.038	-19.7
	10.92	.665	.1555	.031	.037	-19.7
1.20	-2.04	-.284	.0619	.153	.106	-19.4
	-.99	-.211	.0554	.141	.103	-19.4
	-.47	-.173	.0527	.134	.101	-19.4
	.52	-.102	.0486	.122	.098	-19.4
	1.05	-.066	.0477	.115	.096	-19.4
	2.16	.011	.0483	.100	.093	-19.4
	4.28	.162	.0567	.072	.087	-19.4
	6.38	.315	.0759	.043	.083	-19.4
	8.45	.465	.1042	.012	.079	-19.4
	10.57	.610	.1449	-.001	.075	-19.5
	11.33	.654	.1610	-.001	.073	-19.5
1.30	-2.04	-.264	.0605	.142	.095	-19.4
	-1.00	-.194	.0535	.129	.092	-19.4
	-.47	-.159	.0507	.123	.091	-19.4
	.51	-.091	.0477	.110	.089	-19.4
	1.04	-.057	.0468	.103	.087	-19.4
	2.07	.018	.0463	.086	.085	-19.4
	4.26	.150	.0551	.061	.078	-19.4
	6.35	.284	.0716	.033	.070	-19.5
	8.40	.409	.0967	.008	.063	-19.5
	10.48	.587	.1305	-.014	.054	-19.5
	12.56	.631	.1711	-.032	.046	-19.6
1.50	-4.12	-.346	.0715	.148	.081	-19.5
	-2.04	-.233	.0547	.127	.076	-19.5
	-.99	-.172	.0487	.116	.076	-19.5
	-.43	-.141	.0451	.110	.076	-19.5
	.51	-.080	.0433	.097	.073	-19.5

M	α	C_L	C_D	C_m	C_h	δ
1.50	1.04	-0.050	0.0431	0.090	0.072	-19.5
	2.14	.011	.0438	.077	.067	-19.6
	4.25	.129	.0508	.053	.063	-19.6
	6.33	.244	.0647	.029	.062	-19.6
	8.37	.352	.0854	.004	.058	-19.6
	10.44	.456	.1137	-.019	.046	-19.6
	12.51	.557	.1494	-.041	.035	-19.7
1.70	-4.11	-.303	.0663	.130	.073	-19.5
	-2.03	-.202	.0515	.112	.069	-19.6
	-.99	-.149	.0461	.108	.068	-19.6
	-.47	-.122	.0440	.096	.068	-19.6
	.51	-.066	.0411	.083	.068	-19.6
	1.03	-.040	.0405	.077	.068	-19.6
	2.13	.015	.0408	.066	.066	-19.6
	4.22	.118	.0468	.044	.061	-19.6
	6.30	.218	.0597	.022	.052	-19.6
	8.33	.311	.0784	.003	.042	-19.7
	10.40	.402	.1037	-.016	.030	-19.7
	12.47	.489	.1352	-.033	.020	-19.7
	14.54	.573	.1726	-.049	.012	-19.8
1.90	-4.09	-.267	.0624	.112	.073	-19.6
	-2.03	-.172	.0476	.093	.081	-19.5
	-1.00	-.124	.0428	.082	.079	-19.5
	-.48	-.101	.0411	.078	.077	-19.5
	.50	-.054	.0388	.068	.071	-19.6
	1.02	-.031	.0382	.064	.068	-19.6
	2.10	.016	.0385	.054	.063	-19.6
	4.19	.103	.0443	.037	.053	-19.6
	6.25	.189	.0562	.021	.044	-19.7
	8.27	.270	.0735	.006	.032	-19.7
	10.33	.348	.0959	-.008	.022	-19.7
	12.39	.424	.1238	-.021	.013	-19.8
	14.45	.499	.1574	-.033	.005	-19.8
	16.51	.573	.1961	-.045	-.001	-19.8

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TABLE II.- AERODYNAMIC CHARACTERISTICS OF A MODEL EMPLOYING A TRIANGULAR WING OF ASPECT RATIO 3 WITH LEADING-EDGE CHORD EXTENSIONS AND AN ALL-MOVABLE HORIZONTAL TAIL - Concluded

(j) Characteristics for wing-body-tail combination; $\delta_n = -24^{\circ}$

M	α	C_L	C_D	C_m	C_h	δ
0.60	-4.32	-0.343	0.0616	0.069	0.029	-23.7
	-2.18	-.218	.0467	.070	.028	-23.7
	-1.11	-.151	.0413	.070	.028	-23.7
	-.57	-.121	.0399	.070	.028	-23.7
	.45	-.061	.0380	.070	.028	-23.7
	.99	-.031	.0375	.070	.028	-23.7
	2.10	.029	.0375	.069	.028	-23.7
	4.26	.153	.0431	.069	.029	-23.7
	6.40	.279	.0595	.071	.029	-23.7
	10.68	.526	.1211	.076	.032	-23.7
	12.82	.645	.1663	.075	.035	-23.7
	14.93	.739	.2164	.081	.038	-23.7
	17.02	.798	.2648	.102	.041	-23.7
	18.05	.808	.2859	.116	.038	-23.7
0.80	-4.38	-.373	.0665	.080	.038	-23.7
	-2.21	-.234	.0492	.079	.038	-23.7
	-1.12	-.162	.0433	.079	.038	-23.7
	-.58	-.128	.0414	.078	.038	-23.7
	.45	-.063	.0393	.077	.038	-23.7
	1.01	-.030	.0388	.076	.037	-23.7
	2.14	.039	.0390	.074	.037	-23.7
	4.33	.176	.0465	.071	.037	-23.7
	6.50	.311	.0652	.073	.036	-23.7
	8.67	.451	.0962	.068	.036	-23.7
	10.83	.582	.1373	.060	.034	-23.7
	12.94	.700	.1857	.051	.032	-23.7
	15.07	.799	.2403	.045	.034	-23.7

M	α	C_L	C_D	C_m	C_h	δ
0.90	-4.42	-0.409	0.0742	0.097	0.053	-23.7
	-2.22	-.251	.0530	.091	.053	-23.7
	-1.12	-.175	.0467	.089	.054	-23.7
	-.56	-.139	.0447	.088	.053	-23.7
	.46	-.068	.0421	.087	.053	-23.7
	1.02	-.031	.0413	.085	.053	-23.7
	2.17	.046	.0424	.082	.053	-23.7
	4.38	.199	.0524	.077	.054	-23.7
	6.58	.361	.0765	.070	.054	-23.7
	8.78	.525	.1153	.053	.046	-23.7
	10.89	.650	.1578	.031	.040	-23.7
1.30	-3.80	-.382	.0880	.170	.117	-23.4
	-2.04	-.271	.0730	.152	.113	-23.4
	-.99	-.205	.0687	.141	.111	-23.4
	-.46	-.170	.0642	.135	.111	-23.4
	.52	-.104	.0611	.123	.108	-23.4
	1.05	-.072	.0601	.117	.106	-23.5
	2.15	-.002	.0600	.104	.105	-23.5
	4.27	.129	.0667	.077	.101	-23.5
	6.36	.263	.0825	.051	.096	-23.5
	8.41	.386	.1068	.027	.090	-23.5
	10.50	.501	.1386	.004	.070	-23.6
	12.58	.608	.1788	-.014	.076	-23.5
1.50	-4.11	-.374	.0828	.155	.101	-23.5
	-2.03	-.241	.0659	.136	.097	-23.5
	-.99	-.182	.0601	.126	.096	-23.5
	-.47	-.152	.0577	.121	.095	-23.5
	.52	-.093	.0548	.110	.092	-23.5
	1.04	-.065	.0543	.104	.091	-23.5

M	α	C_L	C_D	C_m	C_h	δ
1.50	2.14	-0.002	0.0550	0.092	0.086	-23.5
	4.24	.113	.0611	.067	.083	-23.7
	6.32	.225	.0747	.045	.075	-23.5
	8.36	.330	.0950	.023	.069	-23.6
	10.44	.432	.1224	.002	.083	-23.5
	12.51	.532	.1565	-.019	.068	-23.6
1.70	-4.10	-.313	.0774	.138	.084	-23.5
	-2.02	-.214	.0627	.123	.082	-23.5
	-.99	-.162	.0575	.114	.081	-23.5
	-.47	-.136	.0555	.109	.079	-23.5
	.51	-.084	.0530	.099	.077	-23.5
	1.03	-.057	.0524	.093	.076	-23.5
	2.12	-.004	.0525	.083	.073	-23.6
	4.22	.096	.0579	.063	.072	-23.6
	6.29	.198	.0695	.042	.073	-23.6
	8.33	.295	.0868	.019	.064	-23.6
	10.39	.386	.1111	-.001	.054	-23.6
	12.45	.475	.1419	-.019	.044	-23.7
	14.52	.560	.1786	-.036	.034	-23.7
	16.58	.642	.2209	-.053	.022	-23.7
1.90	1.02	-.052	.0500	.085	.079	-23.5
	2.11	-.001	.0488	.072	.076	-23.6
	4.18	.091	.0531	.053	.066	-23.6
	6.24	.178	.0641	.036	.055	-23.6
	8.26	.261	.0809	.018	.044	-23.7
	10.31	.342	.1035	.003	.034	-23.7
	12.36	.419	.1311	-.012	.026	-23.7
	14.41	.454	.1638	-.025	.020	-23.7
	16.47	.571	.2023	-.037	.013	-23.8
	17.50	.607	.2234	-.043	.011	-23.8

[redacted]

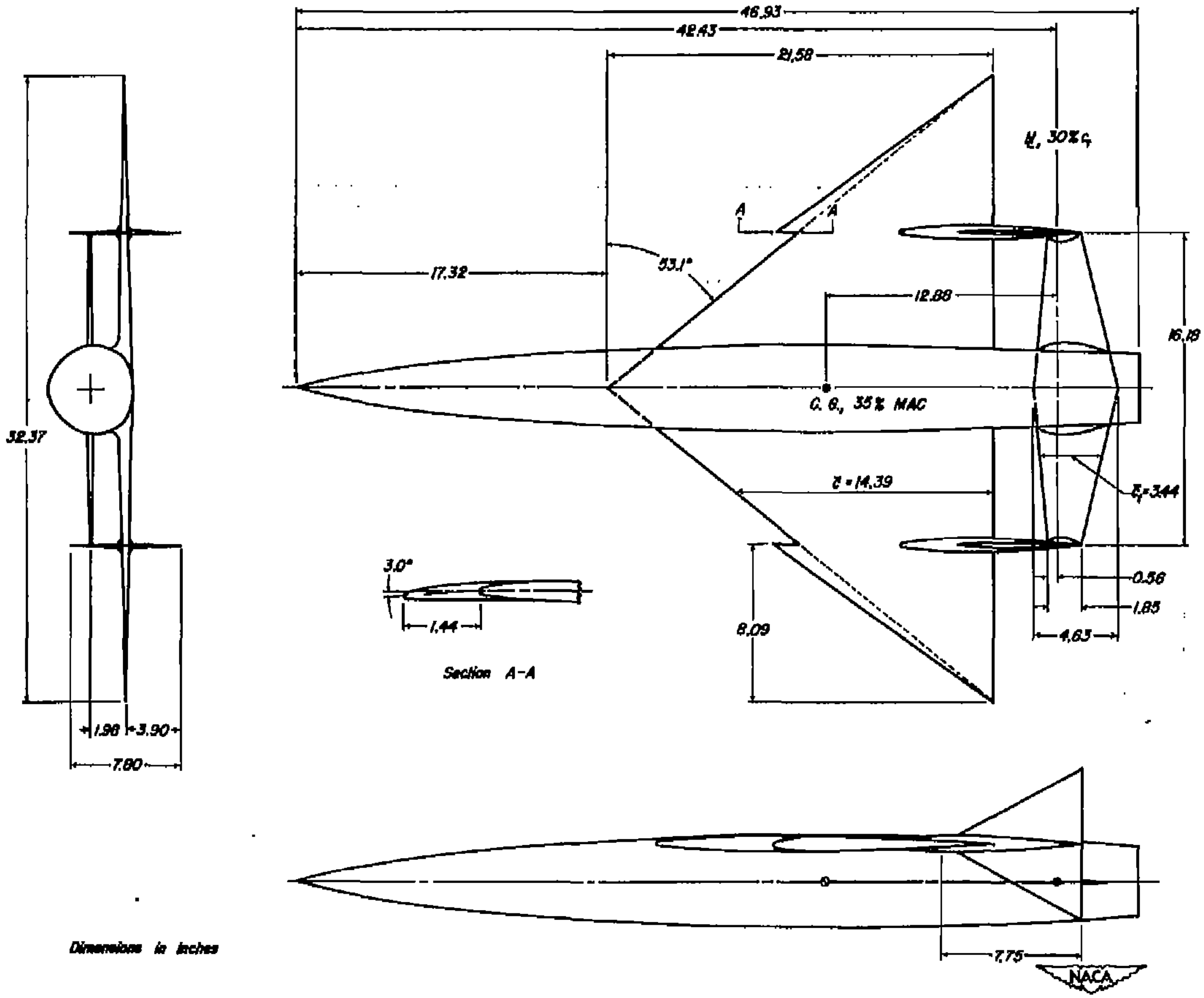

Figure 1.- Dimensional sketch of the model.

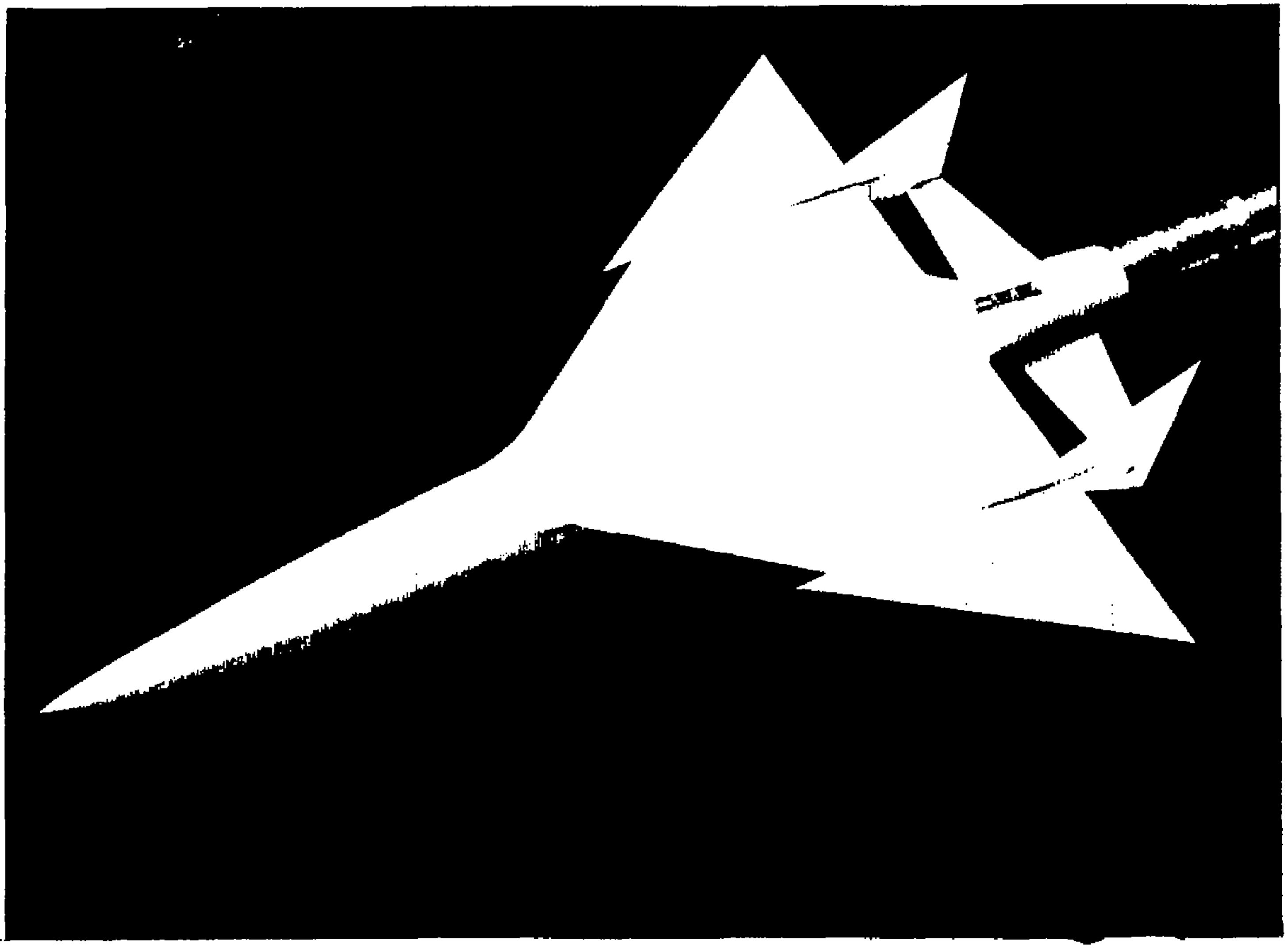

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Figure 2.- Three-quarter front view of wing-body-tail combination with leading-edge chord extensions.

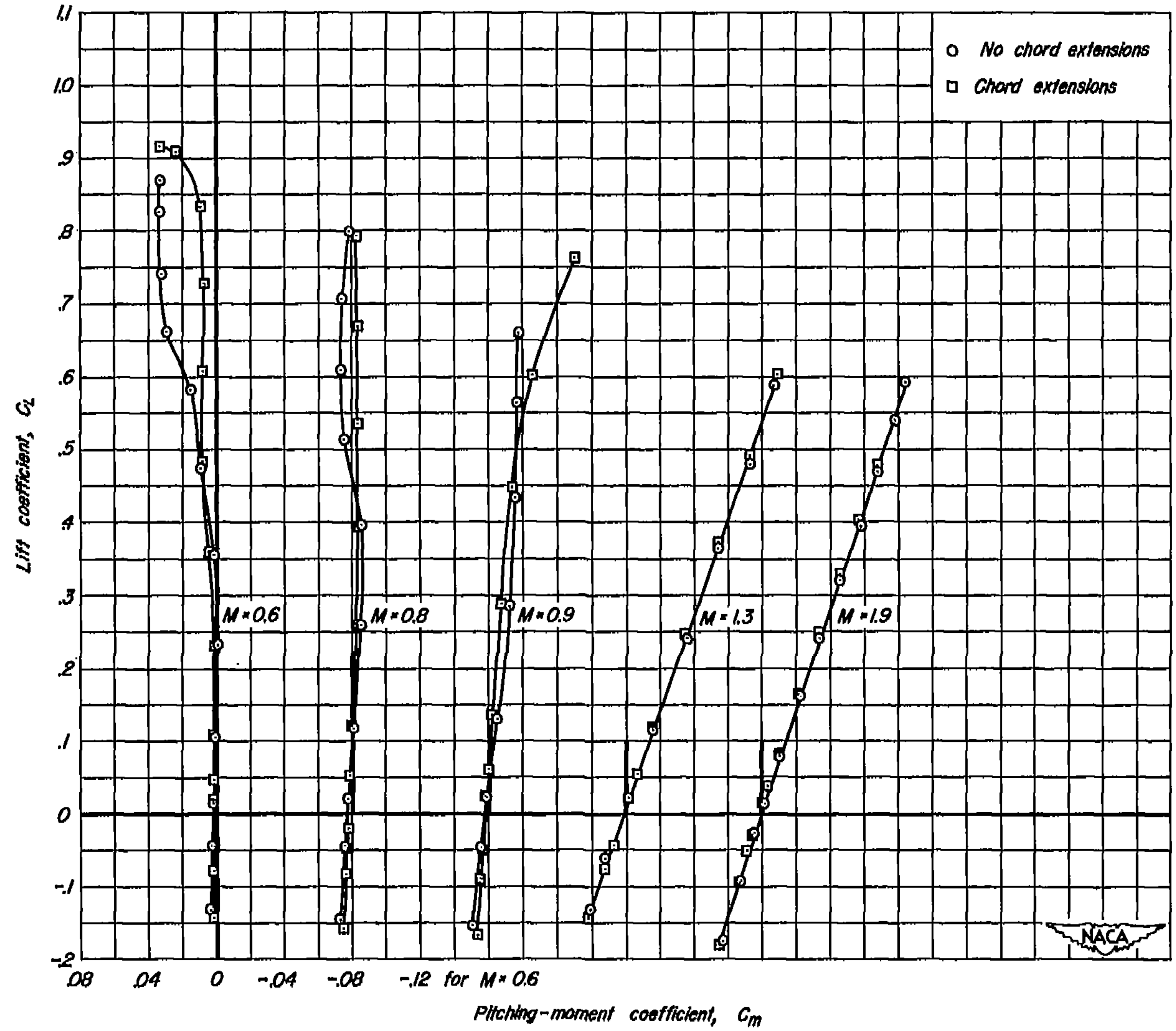
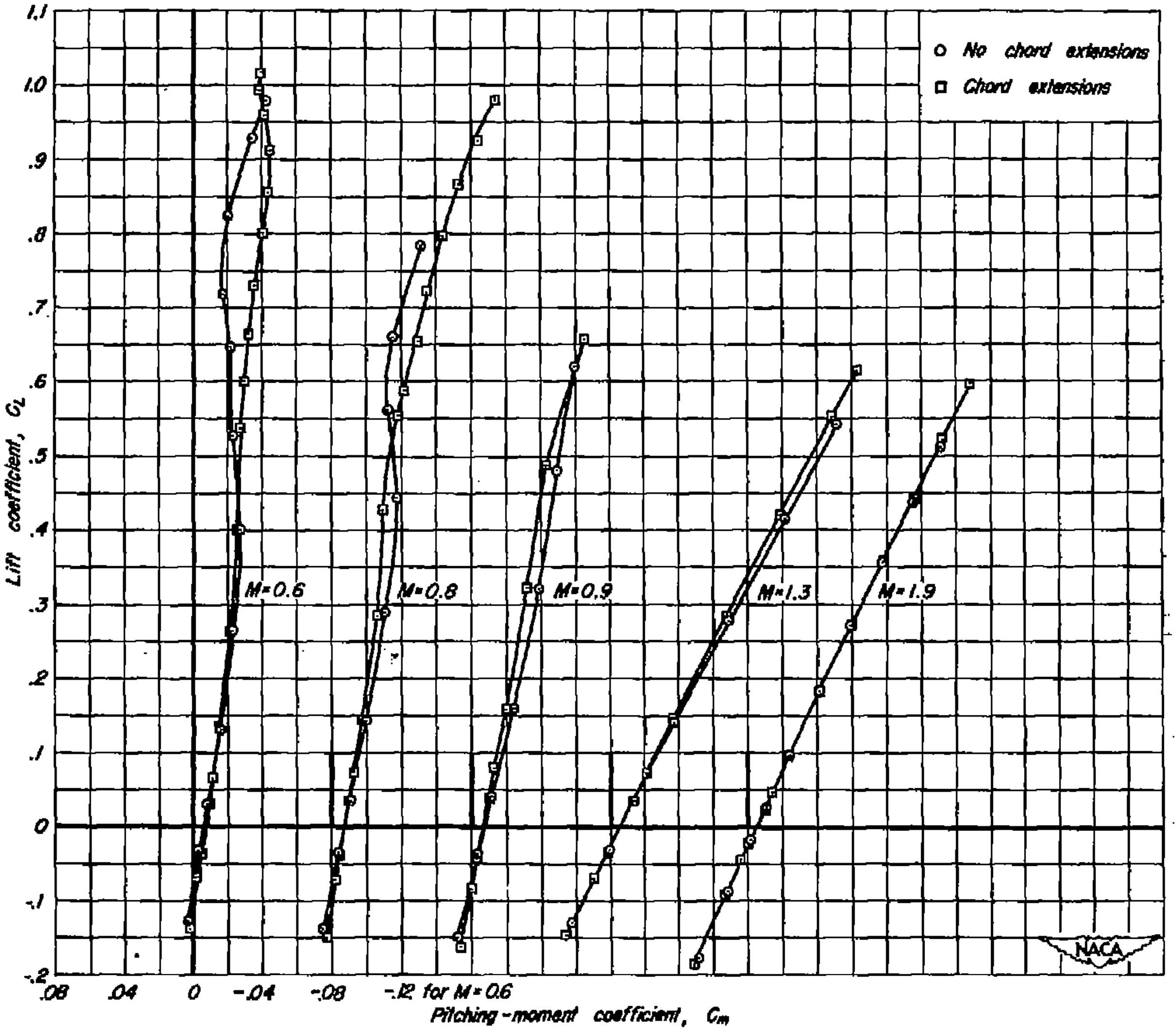


Figure 3.- Effect of leading-edge chord extensions on the variation of pitching-moment coefficient with lift coefficient for a wing-body combination employing a triangular wing of aspect ratio 3 (vertical fins attached to wing).



(a) C_L vs C_m

Figure 4.- Effect of leading-edge chord extensions on the aerodynamic characteristics of a wing-body-tail combination employing a triangular wing of aspect ratio 3 and an all-movable horizontal tail, $\delta_h = 0$.

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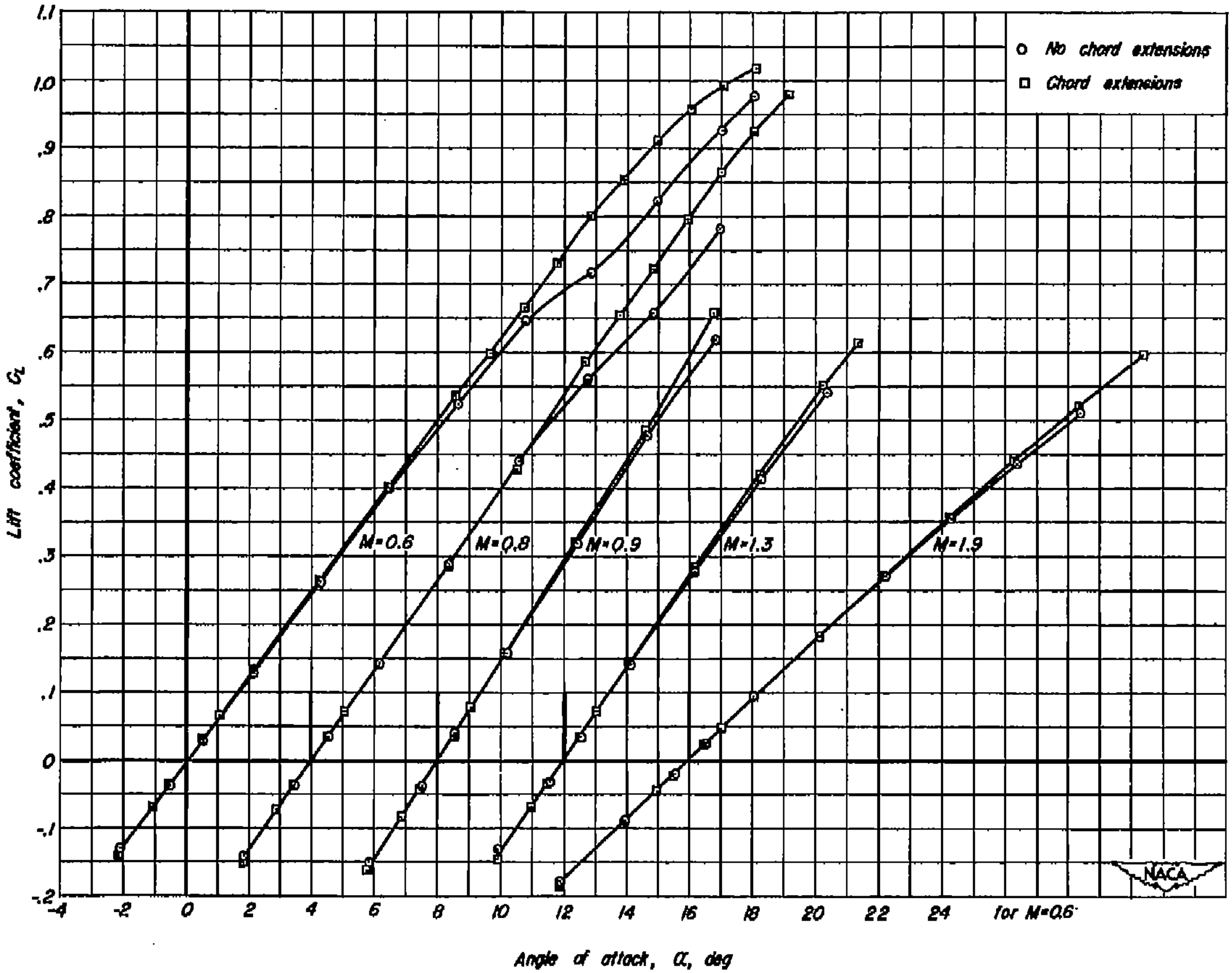

(b) C_L vs α

Figure 4.– Continued.

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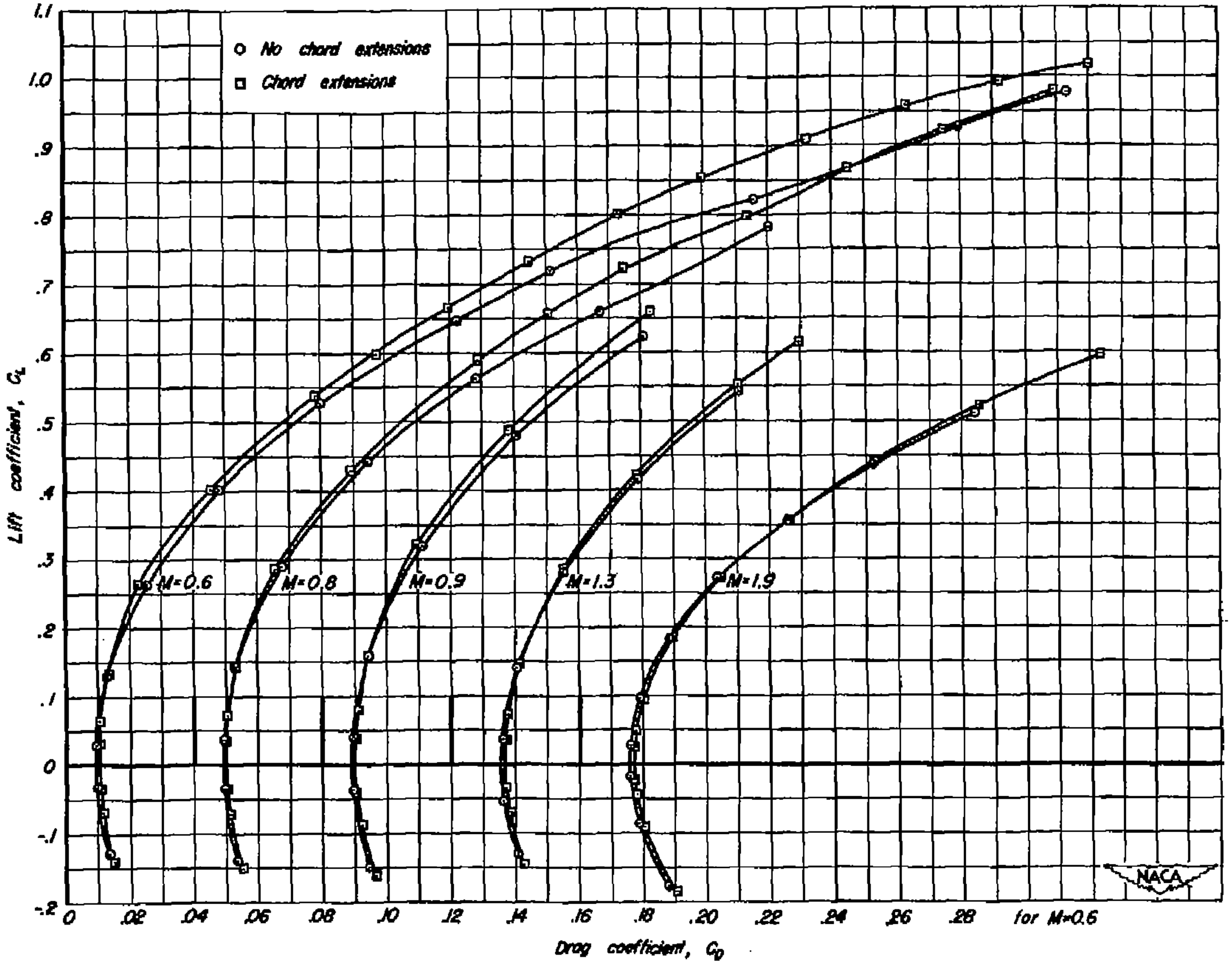

(c) C_L vs C_D

Figure 4.- Concluded.

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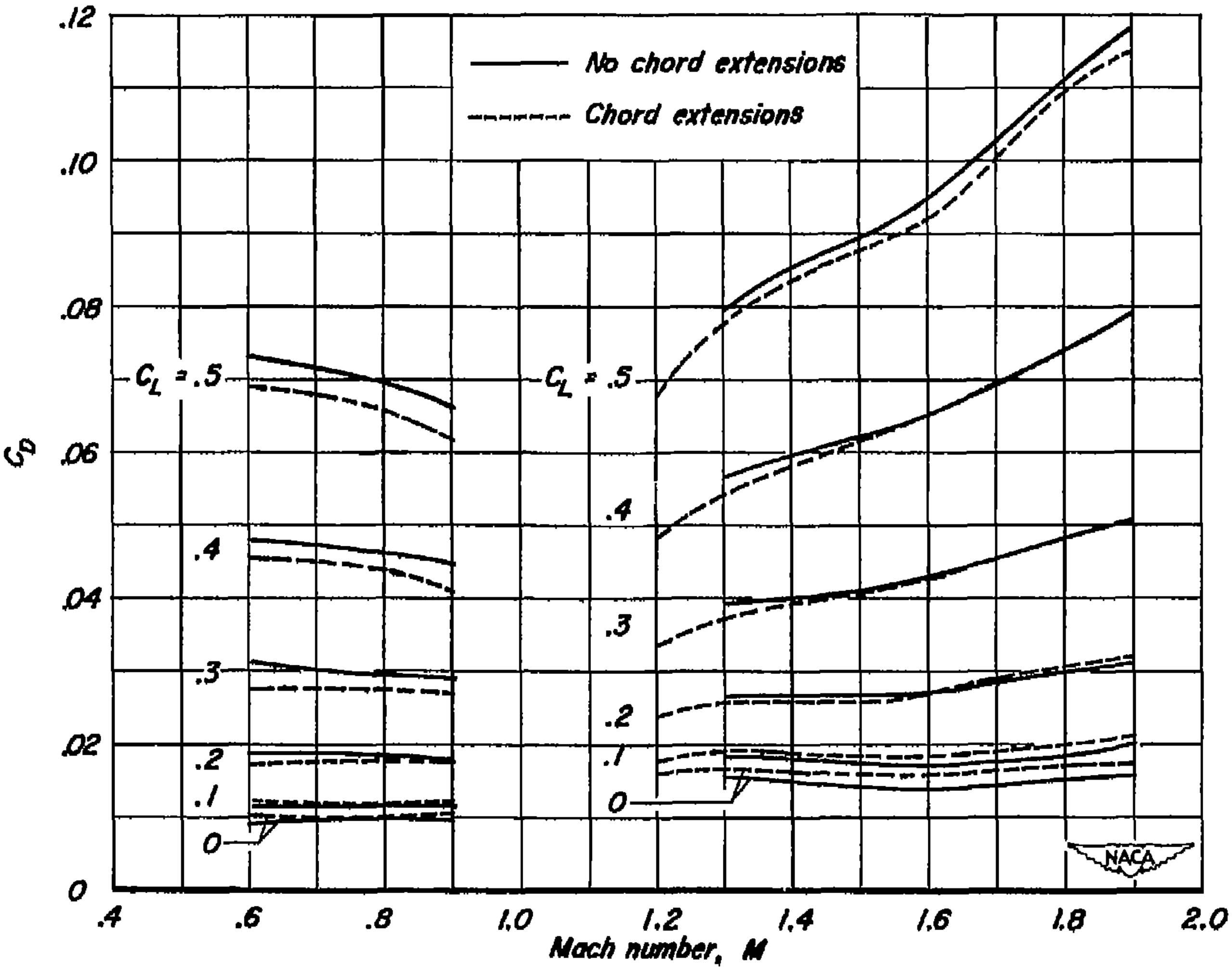

Figure 5.- Effect of leading-edge chord extensions on the variation of the drag coefficient with Mach number for the wing-body-tail combination; δ_n=0.

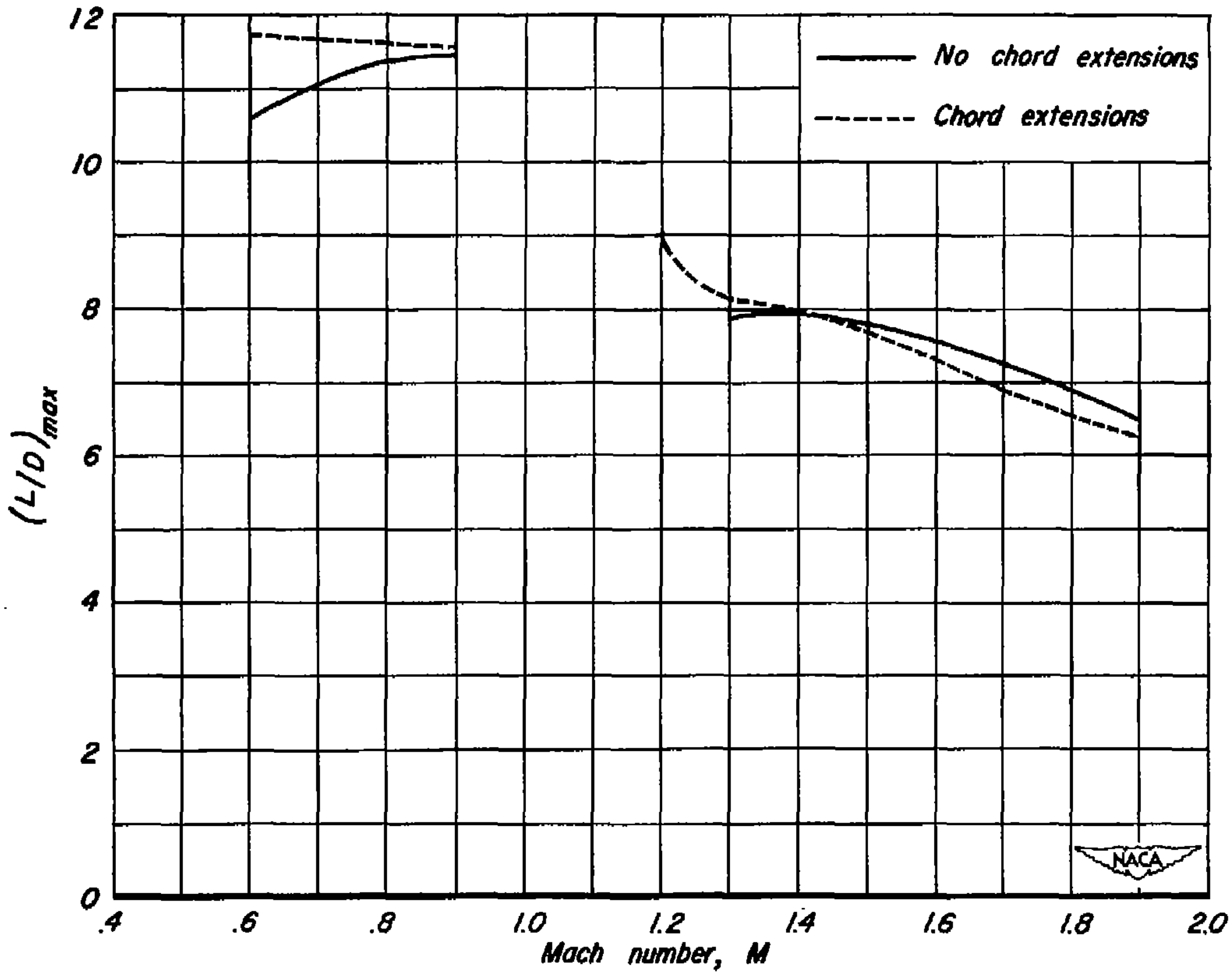

Figure 6.- Effect of leading-edge chord extensions on the variation of the maximum lift-drag ratio with Mach number for the wing-body-tail combination; $\delta_a = 0$.

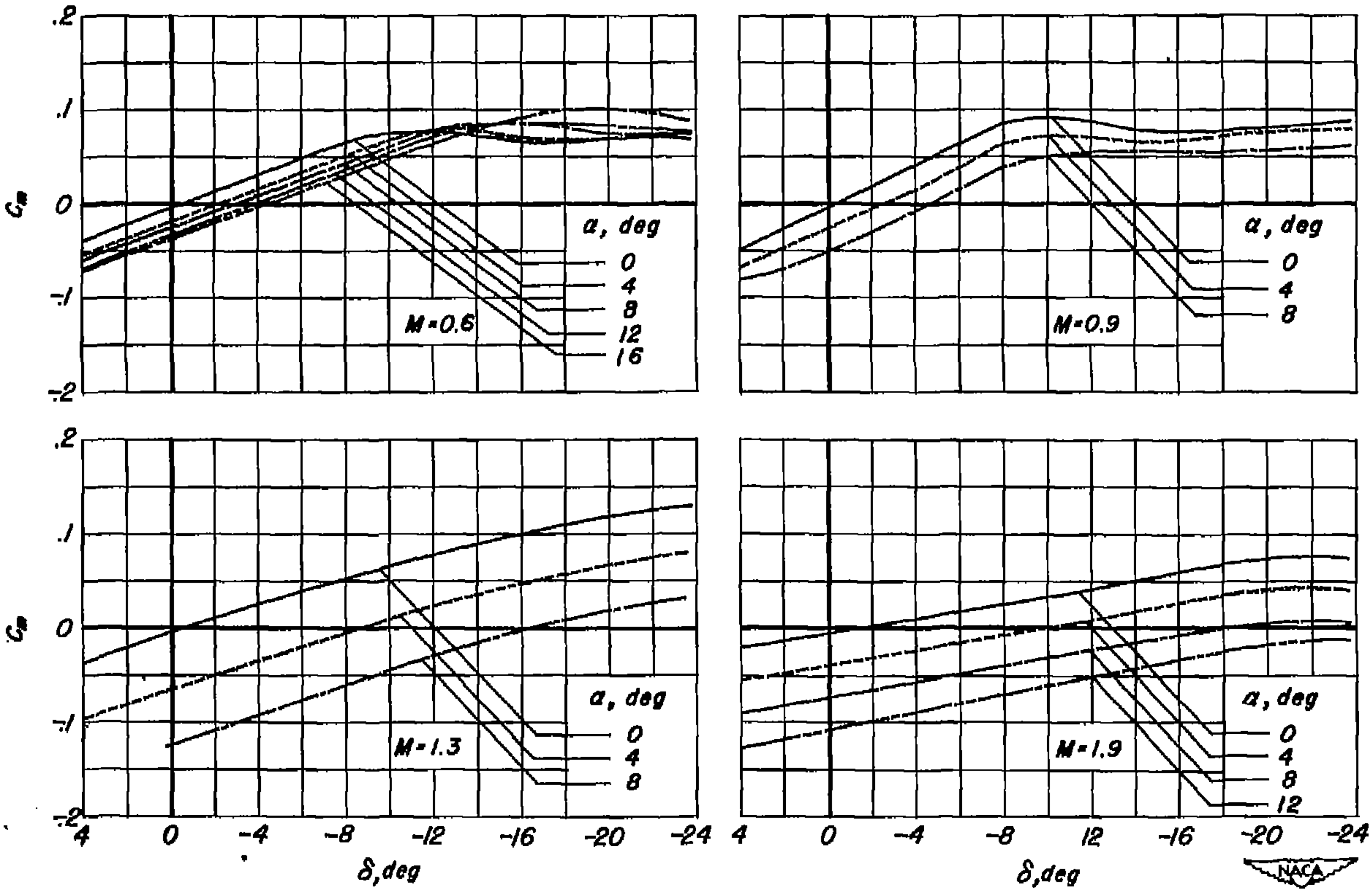

Figure 7.- Variation of the pitching-moment coefficient with horizontal-tall deflection for the wing-body-tail combination with leading-edge chord extensions.

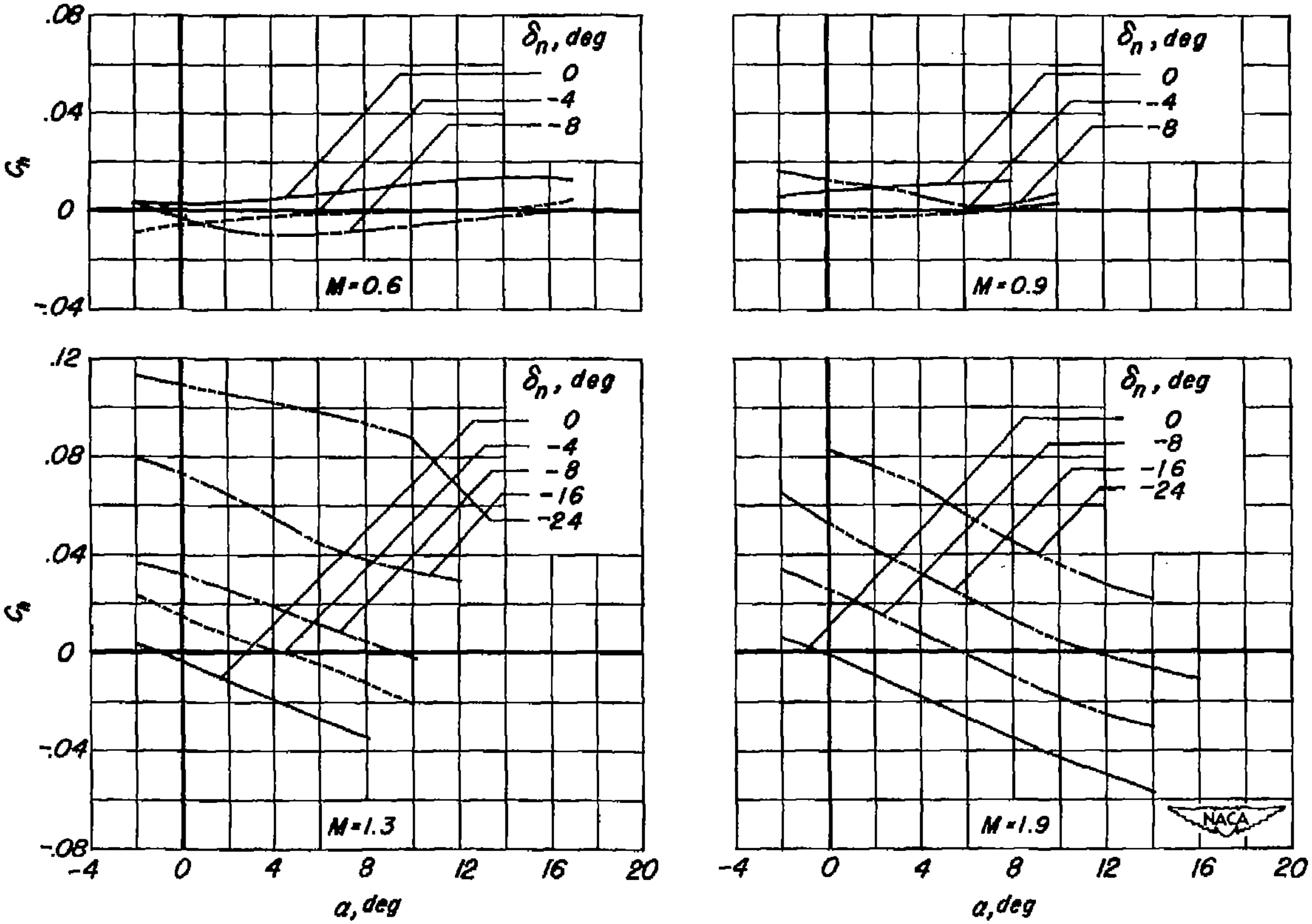

Figure 8.- Variation of the horizontal-tail hinge-moment coefficient with angle of attack for the wing-body-tail combination with leading-edge chord extensions.

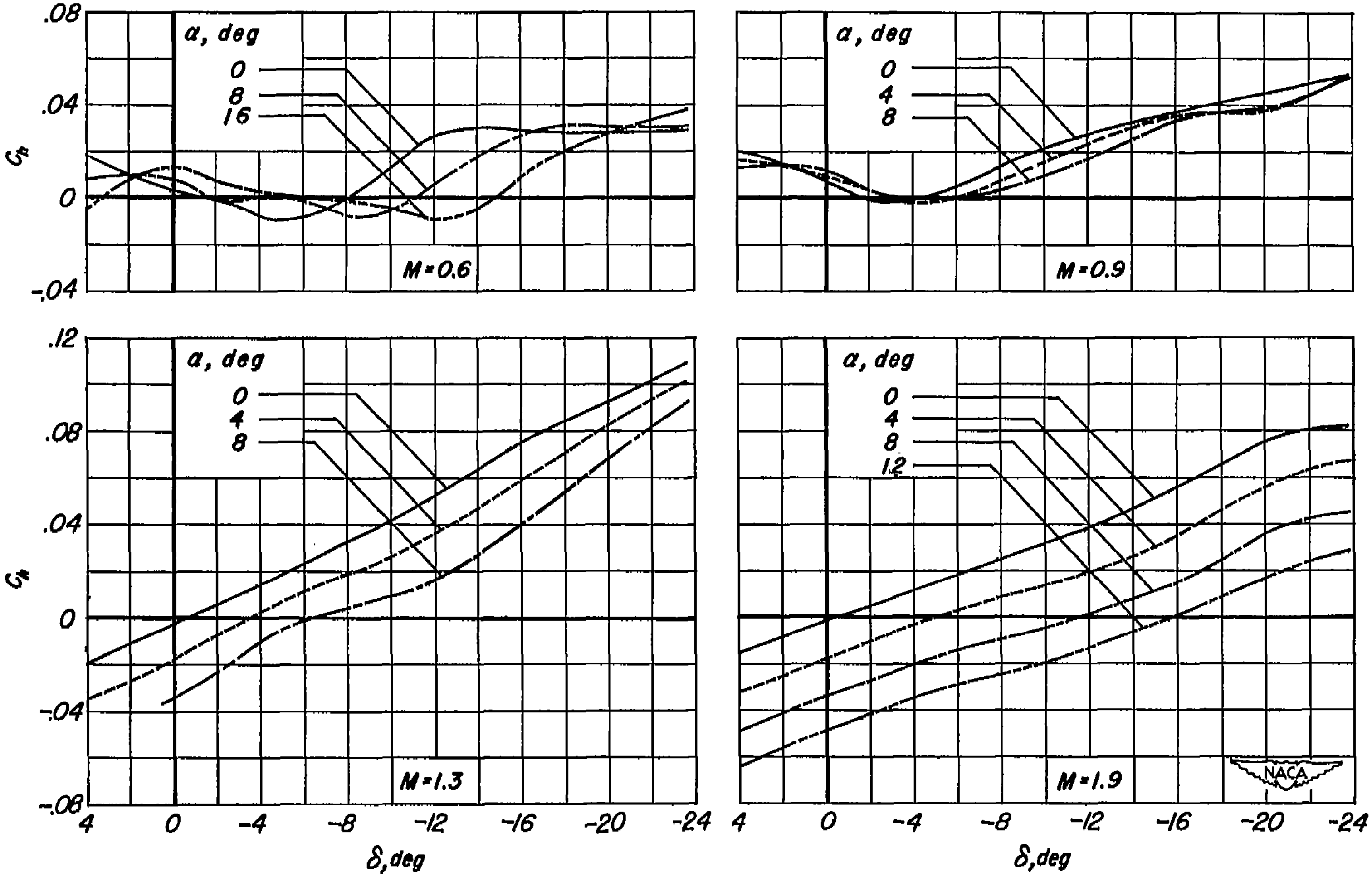

Figure 9.- Variations of the horizontal-tail hinge-moment coefficient with angle of deflection for the wing-body-tail combination with leading-edge chord extensions.

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